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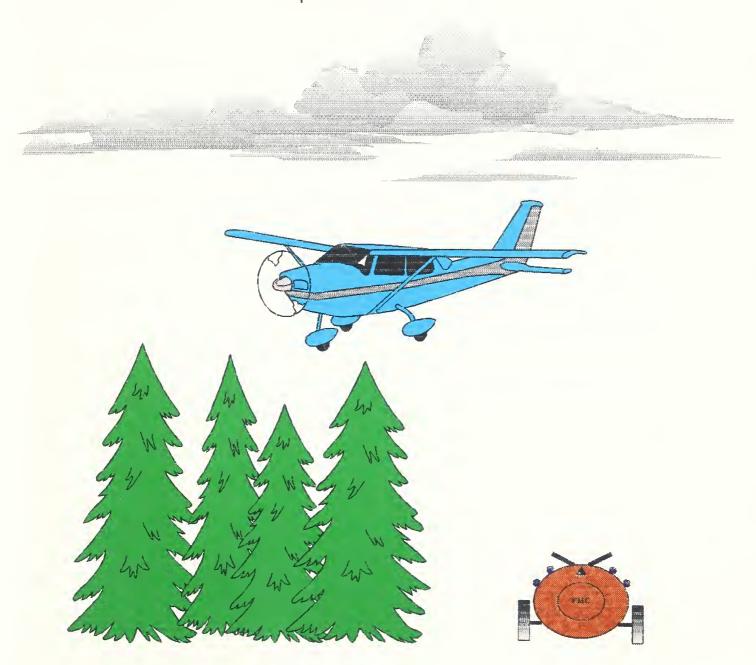
A COMPARISON OF GROUND AND AERIAL APPLICATION AT THE UNION CAMP SOUTHERN STATES LOBLOLLY PINE SEED ORCHARD

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CLAXTON, GA AUGUST 20-22, 1991

Larry R. Barber and Alex Mangini

Forest Pest Management Asheville Field Office Report # 93-1-04 1993





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Larry R. Barber¹, and Alex Mangini²

Introduction

Production of superior seed is of vital concern to federal, state, and private timber interests. Across the South there are nearly 10,000 acres of improved seed orchards which are treated annually with insecticides applied with either aircraft or ground sprayers. This project evaluated deposition and spray drift from both a Cessna Ag truck fixed wing airplane and a FMC Model 757 ground airblast sprayer. This project adds to the database of spray technology for ground based sprayer applications in coniferous seed orchards.

In 1980 a series of test sprays was conducted on the Withlacoochee Seed Orchard near Brooksville, FL (Barry et. al. 1980, Barry et. al. 1982, Barry et. al. 1983, and Barry et. al. 1984). These tests determined the feasibility of applying pesticides with aircraft. Water and dye were aerially applied with a Hughes 500C helicopter. Needle samples of slash and Ocala sand pine taken following aerial application contained more deposition on the upper crown than on the lower crown (Barry et. al. 1981). Also, aircraft spray drift was measured downwind 436 ft (133 m) with winds of 6-16 mi/h. Airblast sprayers were also tested. Deposition was equal to or greater than the helicopter tested. The report stated that ground sprayers "will provide adequate spray coverage of southern pines ranging in height below 50 feet" (15.2 m).

Additional aerial application spray evaluations using azinphos-methyl and fenvalerate at Washington, NC and DeRidder, LA, were successful in controlling seed and cone insects aerially (Barber and Leonard 1985, and Weatherby and Overgaard 1982). The average amount of spray reaching the orchard floor ranged from 55 to 58 drops/cm² when the total solution applied by helicopter was 10 gal/acre. Penetration of this spray through the canopy ranged from 3.9 to 9.3 gal/acre (Barber and Leonard 1985).

Other spray drift studies in seed orchards have provided managers a framework for estimating drift from aerially treating a seed orchard. Drift was deposited up to 60 m downwind of seed orchards in flat terrain and was about 8 percent of the amount deposited in the treated area (Barry, J. W. et. al. 1983). At Washington, NC spray drift deposits were detected 60 m downwind and they ranged from 0.3 to 2.7 drops/cm². Drift can be detected downwind at least 100 m and large amounts of spray are deposited within a 15 m zone surrounding orchards.

By 1987 nearly 80 percent of all orchards were applying pesticides by aircraft only. In this survey of southern pine orchards, droplet size ranged from 385 to 1446 microns VMD. The recommended VMD droplet size is 350 microns (Barber and Fatzinger 1987).

Objectives

The objective of this spray evaluation was to compare spray deposition and drift between ground spray and aircraft application to a loblolly pine seed orchard.

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Materials and Methods

Scope

This cooperative project between the USDA Forest Service and Union Camp Corporation was conducted on the Union Camp Southern States Orchard Complex near Claxton, GA August 20-22, 1991. There were two trials each morning which compared aerial and ground application.

Site Description

The orchard is located 4.5 mi south and west of Claxton, GA. The surrounding area is flat woodlands belonging primarily to Union Camp Corporation with small inholdings of private land. The Southern States Orchard complex contains both one and one-half generation and second generation superior loblolly and slash pine trees. The orchard tree spacing is 22 x 22 ft (6.7m)and the orchard complex contains both loblolly and slash pine. The 8.9 acre Alabama rust resistant loblolly pine source on the Southern States Seed Orchard (Figure 1) was chosen for this study. The trees selected for this study ranged from 31-67 ft in height (9.4 - 20.4 m).

Meteorological Measurement

Meteorological measurements were made with 1) a Handar 540A on a 22 ft (6.7 m) tower located near the center of the spray block, 2) another Handar 540A on a 55 foot (16.8 m) tower located 600 ft (182.9 m) northeast of the spray block and adjacent to the orchard office, and 3) a Forest Technology System F11 on a 6 ft (1.8 m) tower located 300 ft (91.4 m) east of the spray block in an open field (Figures 1-2). All meteorological stations collected wind speed, direction, relative humidity and temperature. The Handars also recorded data each second and averaged wind gusts every minute. The Forest Technology System recorded data each minute. The wind direction for the Handar equipment was recorded in degrees and the Forest Technology equipment was recorded as one of eight directions (N, NE, E, SE, S, SW, W, NW). Meteorological data recorded for each spray trial are in tables 1-3.

Application

The aircraft sprayed a mixture of Bullseye Dye (blue) and water and the ground sprayer applied a mixture of Rhodamine Dye (red) and water. The aircraft application was 1.19 gal/acre (4.5 l). The ground sprayer application was 2.88 gal/acre (10.9 l) for days 1 and 2 and 5.76 gal/acre (21.8 l) for day 3

Aircraft application was with a Cessna Ag Truck Model 185 flying at 110 mi/h (177 km). Table 4 provides aircraft and application parameters. Figure 3 is a schematic sketch of the aircraft nozzle locations. Each day the aircraft flew from the East with 50 ft between swaths.

Ground application was with a FMC 757 Speed Sprayer traveling at 2.5 mi/h (4.0 km). Table 5 provides ground sprayer and application parameters. Figure 4 is a schematic drawing of the ground sprayer.

Sampling

Within Orchard Sampling

Within the orchard were six sets of two trees each selected for sampling. In each of these sets were ground samplers, quadrant samplers in the crown at 25 and 40 ft above ground (7.6 and 12.2 m), and tree line samplers placed at or above the crown on a line (Figure 5). The quadrant and tree lines consisted of 12 oz beverage cans (355 ml) with 2.75 in diameter (7 cm) Kromekote samplers placed on the top and bottom of each can. Within the tree crown, cans were hung at quadrant positions, ie. N,E,S,W, at two heights above the ground. The 12 tree line Kromekote card samplers were spaced at 5 foot intervals. The 41 ground samplers, 4 x 5 in (10.2 x 12.7 cm), were placed flat on the ground 5 ft apart in two lines on either side of tree sets and attached to cardboard backing with rubber bands. Sampler position was maintained throughout the three spray days.

Drift Sampling

During each spray application, lines to measure drift were established beginning 50 ft within the orchard (15.3 m) and extending out from the spray block in 50 ft increments. There were 4 lines in place during spray days 1 and 2, and 5 on day 3 (Figure 2). Drift line samplers were Kromekote cards the same size as the ground samplers.

Trace Element Sampling

Rhodamine WT dye was added to the water applied by the ground sprayer at the rate of 0.7 gal Rhodamine WT in 100 gal of water. The dye was to be used to measure the amount of material deposited on foliage and off target samplers. Subsequent testing determined that its decay rate was too rapid to use as a tracer (Scott Cameron unpublished).

Calibration and Characterization

Aircraft

The aircraft was calibrated each day. The plane was flown into the wind at an altitude of 15 ft. The system was set to spray 1.2 gal/acre over a line of Kromekote cards placed perpendicular to the flight line. The Swath Kit electronic image analyzer was used to determine drop density and size for each card. Eight drops/cm² was set as the limiting drop density for effective swath width.

Ground Sprayer

The ground sprayer was calibrated to deliver 2.9 gal/acre. This was the minimal amount of material the sprayer could properly apply. The nozzles were placed on the upper portion of the sprayer to maximize upward movement of the spray. The rate on day 3 was increased to 5.8 gal/acre by doubling the number of nozzles.

Stain Deposition Measurement

Stains on kromekote cards were measured by placing each card under a dissecting microscope fitted with a graduated measuring reticule. At least 50 stains per card were counted. The area observed on each card did not exceed 16 cm².

Spray stain numbers and sizes were analyzed using the Automatic Spot Counting and Sizing program (ASCAS, Continuum Dynamics) to convert drop counts into spray volumes. The spray volume and numbers of drops/cm² were adjusted for the ground sprayer application rate to equal the aircraft application rate. When equivalent deposition is used in this report it is so noted.

Canopy Penetration Measurement

Canopy penetration is the movement of spray droplets to the ground through a forest canopy. In this study, canopy penetration was determined for each set of trees by measuring the deposition on three cans above the trees, four cans within the upper quadrant, four cans in the lower quadrant, and six flat Kromekote samplers (three each side) directly under each tree (Figure 5). For the aircraft the upper can line above the tree represented 100 percent deposition.

Results

Characterization

Volume median diameter (VMD) for the aircraft was 195.8, 135.7, and 127.2 microns for days 1, 2, and 3 respectively. The effective swath width for day 1 for a single pass was 90 ft. On day 2 the effective swath was calculated at 110 ft and on day 3 it was 100 ft. A swath width was not determined for the

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ground sprayer. Based on ASCAS analysis of spray deposition on the can line the VMD for day 3 was 151 while the ground line was 202 microns.

Meteorological Conditions At Spray Time

Day 1

Spray conditions were the most extreme during the three day trial with maximum wind gusts of 5.5 mi/h and 7.2 mi/h recorded during the air and ground applications respectively (Table 1). The wind was out of the west-southwest with temperatures in the lower eighties and relative humidities in the upper sixties to mid eighties. Within the test site, wind speed was always greater above the tree crown than at either mid-crown or ground level positions (Tables 1-3).

Day 2

Spray conditions were milder (Table 2) with wind from the west at generally less than two mi/h. Relative humidity was lower ranging from 58.6 to 93 percent.

Day 3

The wind at 55 ft, ranged up to 2.6 mi/h from the north-northwest. Relative humidity in the orchard ranged from 68.7 to 90 percent and the temperature went to 82.3 F° during the ground sprayer application (Table 3).

Tree Line Deposition

Day 1

Deposition on the top tree line samplers was variable among the six tree lines. The average drops/cm² on the top card surface (Table 6) ranged from 3.35 to 11.17 with the aircraft. The aircraft deposition ranged from 14.18 to 156.57 fl oz/acre on the top card surface compared to deposition of from 1.34 to 7.27 fl oz/acre from the ground sprayer. Tree line deposition for either the top or bottom Kromekote sampler was generally less with the ground sprayer (Table 7 and Figures 6-10).

Day 2

Ground sprayer deposition was greatest on the number four tree line top card position where 1.87 drops/cm² were recorded. This amounted to an equivalent of 9.55 fl oz/acre. Generally ground sprayer deposition was higher on the bottom surface than on the top surface. Aircraft deposition was usually greater than ground deposition on the top card sampler (Figures 11-17).

Day 3

Aircraft deposition was highest of the three day trial with deposition (top card) ranging from 11.13 to 28.69 drops/cm² per tree line. This average deposition was far better than found the previous two days. The bottom samplers received little aircraft deposition as was the case the previous two days. The average deposition for the ground sprayer on the tree line samplers was less than the aircraft. The most deposition by the ground sprayer was less than half the aircraft deposition on similar cards (Figures 18-23).

Ground Line Deposition

<u>Day 1</u>

The ground sprayer application resulted in less deposition on ground cards than did the aircraft application (Figures 24-26 and Tables 8-9). Deposition averaged 46.5 fl oz/acre from the aircraft and 35.01 fl oz/acre from the ground sprayer. There was no ground line six for day 1.

Day 2

Deposition from the aircraft for all ground lines averaged 52.3 fl oz/acre as compared to 15.0 fl oz/acre from the ground sprayer. Aircraft spray droplet concentration in drops/cm² ranged from 5.07 to 8.84 while the ground sprayer ranged from 2.23 to 3.03 (Tables 7-8). Figures 27-29 depict the actual deposition across the ground lines as applied.

Day 3

Aircraft spray droplet concentration ranged from 4.4 to 9.7 drops/cm² while the ground sprayer's deposition was 1.6 to 3.5 drops/cm² (Tables 8-9). Average aircraft deposition on all ground cards was 21.0 fl oz/acre and with the ground sprayer 15.2 fl oz/acre. Figures 30-32 depict the actual spray deposits in drops/cm² as applied.

Canopy Penetration

Day 1

Analysis of canopy penetration resulting from aerial application determined that 20.3 percent of the maximum deposition found on the upper tree line cans reached the ground (Figure 33). On the upper quadrant cans (top card), 22.5 percent deposition (drops/cm²) was recorded while another 15.3 percent was deposited on the quadrant cans in the lower quadrant. On the upper can line there was an average of 19.46 drops/cm² (top card). On the bottom card (upper can line) the deposition was only 0.94 drops/cm² as compared to 3.37 from the ground sprayer. Deposition averaged 73.01 fl oz/acre for the upper tree line (top card) directly above sample trees and 57.29 on the ground line under the trees (Figure 34). At 40 ft in the upper quadrant, the most deposition detected was 36.43 fl oz/acre with the aircraft (top card) as compared to 9.77 with the ground sprayer (bottom card).

The most deposition for the ground sprayer was found on the lower quadrant cans (bottom card) where 7.92 drops/cm² were detected. On the ground line under the trees there were 5.73 drops/cm² compared to 3.96 from the aircraft. This was the only spray which resulted in more deposition on the ground line from the ground sprayer than from the aircraft.

Day 2

The six ground samplers for each of the 12 trees received an average of 7.2 and 2.6 drops/cm² for the aircraft and ground sprayers respectively (Figure 35). For the aircraft this was 52.1 percent of the maximum attained on the tree line above the canopy. Canopy deposition for the upper and lower canopy (top card) for the aircraft was 4.1 and 3.5 drops/cm² respectively which represented 29.4 and 25.2 percent of the upper tree line deposition.

Ground sprayer deposition was greatest on the lower quadrant cans where 9.94 drops/cm² were found as compared to 0.07 for the aircraft. Deposition in fl oz/acre amounted to 77.03 on the lower quadrant samplers (bottom card) and only 12.21 on the ground line (Figure 36). The average deposition on the upper quadrant cans (bottom card) was 5.08 fl oz/acre as compared to 5.21 on the upper can line (bottom card).

Day 3

The highest concentration of droplets detected on the tree line above the tree crown during the three day trial was on day 3 (top card) where 21.8 drops/cm² (Figure 37) or 51.81 fl oz/acre (Figure 38) were found. Deposition as a percent of the tree line in drops/cm² for the upper and lower quadrant (top card) and ground lines for aircraft application was 30.6, 23.4, and 36.3 percent respectively.

Maximum deposition for the ground sprayer was found on the lower quadrant cans (bottom card) at 9.64 drops/cm² or 18.29 fl oz/acre, however, there was no aircraft deposition on these cards. At 40 ft maximum deposition was 6.31 fl oz/acre on the top sampler.

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Spray Drift

Day 1

Deposition within the orchard and at the orchard edge for both the air and ground sprayer was between 44.9 and 46.5 fl oz/acre on day 1, drift line one (Tables 10-11) which was most nearly downwind of the spray blocks (Figure 2). Deposition dropped off rapidly within 150 ft of the orchard with droplets detected to 300 ft (Figures 39-40). Spray deposit ratios (Table 12) indicate deposition after 150 ft of the orchard was less 0.03 percent of that found inside the orchard following the ground sprayer application. Drift deposition on drift line one for the aircraft was slightly higher with little detected beyond 200 ft of the treated blocks. Deposition from the aircraft dropped below 20 percent of orchard values beyond 150 ft downwind of the spray block.

Day 2

Drift cards on line one were wet starting at 200 ft from the orchard and the cards were not counted, however, they did receive deposition from the aircraft. Trace amounts of spray drift were detected on line two up to 400 ft for both applicators (Figures 41-42) with little difference noted between applicator types (Tables 10-12).

Day 3

On day 3 the wind was slightly higher and more deposition was detected downwind from the aircraft application (Figures 43-45). Deposition in small quantities was detected downwind on drift line one and zero to 1000 and 650 ft respectively with a wind 1.9 mi/h and a gust of 2.6 mi/h. On drift card line two, aircraft deposition was detected to 400 ft while ground sprayer deposition was detected to 200 ft. Ground sprayer drift deposition for drift line one was detected to only 250 ft beyond the orchard edge. Ground sprayer deposition for drift lines zero, one, and two fell below one fl oz/acre beyond 100-150 ft of the orchard edge and in comparison the aircraft deposition exceeded one fl oz/acre up to 350 ft on line one, and 200 ft on line zero and 150 ft for line two.

Upper Quadrant Deposition

<u>Day 1</u>

Aircraft and ground sprayer deposition was variable both between tree lines and quadrants (Figures 46-51). The aircraft deposition ranged up to 107.87 fl oz/acre on tree line four (top card). Spray deposition from the aircraft (bottom card) was much less ranging from 0.0 to 0.64 fl oz/acre (Table 13). Maximum ground sprayer deposition (bottom card) was found on tree set six to be 1.53 drops/cm² (Table 14).

Day 2

Spray deposition for both air and ground sprayers was variable between quadrants (Figures 52-57). There was more spray deposition from the aircraft on the tops of the spray cans than on the bottoms (Table 13). Spray deposition ranged up to 19.38 fl oz/acre on tree line four upper tops of quadrant can kromekote paper. In most cases the majority of spray deposition from the ground sprayer was found on the bottoms of the cans.

Day 3

Spray deposition was highly variable between quadrants (Figures 58-63). Average deposition from the ground sprayer was higher on the top of the can sampler than on the bottom at 6.30 and 5.4 fl oz/acre respectively. This compares with aircraft deposition on the top of the cans of 17.01 fl oz/acre.

Lower Quadrant Deposition

<u>Day 1</u>

Spray deposition on the top card in the lower quadrant ranged from 6.61 to 38.5 fl oz/acre for the aircraft (Table 15). This compares to ground deposition of up to 39.22 fl oz/acre (Table 16). On the bottom of the same cans the ground sprayer deposition on the same cards ranged up to 124.77 fl oz/acre.

Day 2

Aircraft deposition on the top of the spray cans was less than day 1 and very little deposition was found on the bottom of the cans. In comparison most of the ground sprayer deposition was detected on the bottom of the cans ranging up to 123.48 fl oz/acre.

Day 3

Deposition was less this day from the ground sprayer than on previous days and the average deposition was nearly evenly distributed between top and bottom sample cards ie. 17.1 and 18.3 fl oz/acre. There was no aircraft deposition on the bottom cards while deposition on the top cards ranged up to 16.06 fl oz/acre or 6.98 drops/cm².

Discussion

Insect control is crucial to seed orchard managers and the desire to adopt new spray technology has spawned several nationwide training sessions. Forest Pest Management made a commitment to the southern forest genetics industry to improve seed yields through reduced losses from insect pests. The Withlacoochee Seed Orchard spray trials evaluated the feasibility of aerial application to seed orchards, however, ground spray application was not fully tested.

In this study aerial application resulted in deposition (drops/cm²) on the ground samplers of 20.3 to 52.1 percent of the deposition on the tree line 52 ft above (top card). On ground line spray cards directly under the trees (Figures 33-38), for two out of three days there was more spray deposition on the ground following aircraft application. However, if all 41 ground cards per tree line were evaluated, there was always more deposition on the ground cards following the aircraft application.

The ground sprayer was more efficient at applying spray droplets to cans hung 25 ft above the ground. In comparison, the aircraft was far more efficient at applying spray droplets to cans hung at 40 ft above the ground. In most years, the cone crop starts at or above mid crown, thus it is of vital importance to deliver the pesticide to the upper canopy at heights equal to or exceeding 40 ft.

Off target spray drift is increasingly becoming an important issue. This study was in general agreement with past aircraft spray drift studies. In the Claxton Trials, on day 1 spray drift from the aircraft was 20 percent of the orchard deposition 150 ft outside the spray block and 8 percent at 200 ft. On day 2 aircraft spray deposition was only 18 percent of orchard deposition 150 ft. On day 3 deposition fell to 19 percent of orchard deposits at 250 ft but small amounts of deposition were recorded to 1,000 ft. Drift line zero also had deposition of over 50 percent of the orchard deposition at 200 ft..

In comparison, drift from the ground sprayer was in nearly every case less than the aircraft when equivalent spray volumes were used. Drift on 1 one was 20 percent the orchard deposition 150 ft downwind on drift line one. On day 2 deposition was only 18 percent at 150 ft downwind of the spray block on drift line one. For day 3 on drift line one, deposition was 107 percent that found in the orchard, 150 ft from the orchard edge. No spray drift was detected beyond 250 ft for the ground sprayer as compared to drift up to 1,000 ft for the aircraft.

In this evaluation, drop size and volumes did not represent a normal spray application for the ground sprayer or the aircraft. Under normal spray conditions an orchard manager would applied 100 gal of spray mix per acre at approximately 350 VMD with a ground sprayer. Based on a ground sprayer

application volume of 100 gal/acre on day 1, 2, and 3 for drift line one there would have been 329.2, 31.7, and 14.2 fl oz/acre at 150 ft from the orchard. This would compare to aircraft deposition of 50, 55, and 201 fl oz/acre at 150 ft on drift line one for days 1, 2, and 3 if the aircraft application was at 10 gal/acre. Under normal conditions, when applying azinphos-methyl the VMD would be 350 microns and would result in less drift. Aircraft application of Foray 48B, however is at 1 gal/acre at droplet sizes less than 200 microns. At this spray application volume the drift at 150 ft is projected to be 5.0, 5.5 and 20.1 fl oz/acre on days 1, 2, and 3 for drift line one.

Problems arising from spray drift from aircraft or ground sprayers is mitigated in most orchards by buffer zones which surround most southern pine orchards. In most cases the majority of spray drift deposits would fall within these buffer zones.

Recommendations

Because these data suggest more spray drift from aircraft in seed orchards compared to ground sprayer, additional tests should measure spray drift from both ground sprayers and aircraft. Because new evidence indicates Rhodamine WT breaks down too fast under field conditions future tests should include a different tracer such as manganese sulfate or other dye. More sophisticated equipment should be used to measure off-site drift. This might include electrically powered air vacuums for collecting small diameter spray droplets. Additional meteorological equipment is also needed to measure weather at many heights both inside and outside the orchard. Any additional tests should be conducted in the South during the summer when conditions are similar to the conditions of this study. Additionally, several types of ground sprayers should be evaluated for spray drift.

Acknowledgement

The authors gratefully acknowledge the cooperation and assistance of the following people and organizations:

Union Camp Southern States Seed Orchard - George Lowerts, Cary Taylor, Ben Barnes, and Terry Carper.

USDA Forest Service Forest Pest Management, Huey Wallace, Billy Bruce, Ken Kline, Denny Ward, Mark Robison, Nathan McKee, Brenda Fore, Darlene Tolman, Delos Hooper, Steve Covington, Anthony Elledge, Connie Reynolds, and Keith Windell.

USDA Forest Service, SEFES, Dale Wade.

Literature Cited

- Barry, J. W., Barber, L. R., Kenney, P. A., and Overgaard, N. A. 1984. Feasibility of aerial spraying of southern pine seed orchards. Southern Journal of Applied Forestry. Vol. 8, No. 3.
- Barry, J. W., Ekblad, R. B., and Barber, L. B. 1980 Aerial application to coniferous seed orchards. Presented to the 1980 ASAE/NAAA jointly sponsored technical session on agricultural aviation research at the National Agricultural Aviation Association annual meeting, Las Vegas, Nevada.
- Barry, J. W., Ekbald, R. B., Kenney, P. A., and Barber, L. R. 1983. Drift from aerial application to coniferous seed orchards. American Society of Agricultural Engineers and National Agricultural Aviation Association paper No. AA-83-003. Reno, NV., U. S. Dep. Agric. For. Serv. 8 pp.
- Barry, J. W., Kenney, P. A., Barber, L. R., Ekblad, R. B., Dumbauld, J., Rafferfy, J. E., Flake, H. W., and Overgaard, N. A. 1982. Aerial Application to Southern Pine Seed Orchards Data Report of the Withlacoochee Trials. U. S. Dep. Agric. For. Serv., Forest Pest Management, Asheville Field Office Report #82-1-23, May 1982.

- Barry, J. W., Wong, J., Kenney, P. A., Barber, L. R., Flake, H. W., and Ekblad, R. B. 1981. Deposition of pesticide drops on pine foliage from aerial application. Zeitschrift fur angewandte Entomogie, Sonderdruck aus Bd. 92 (1981), H. 3, S. 224-323.
- Barber, L. R., and Fatzinger, C. W. 1987. Aerial application methods used in southern pine seed orchards. Presented to the 1987 Symposium on Aerial Application of Pesticides in Forestry at the Associate Committee on Agricultural and Forestry Aviation of the National Research Council of Canada and The Canadian Forestry Service meeting. Ottawa
- Barber, L. R., and Leonard, D. S. 1985. Final report: 1980 1981 Guthion-Pydrin aerial application pilot study. Forest Pest Management report No. 85-1-11. Asheville, NC, U. S. Dep. Agric. For. Serv. 27 pp.
- Weatherby, J. C. and Overgaard, N. A. 1982. Final Report Pilot Test For Controlling Coneworms and Seedbugs by Aerial Application of Pydrin and Guthion at the Beauregard State Seed Orchard, Deridder, Louisiana. Forest Pest Management Report No. 83-82-12. Alexander, La., U. S. Dep. Agric. For. Serv. 16 pp.

Disclaimer

The use of trade, firm, or corporation names is for the information and convenience of the reader. Such use does not constitute an official evaluation, conclusion, recommendation, endorsement, or approval of any product or service to the exclusion of others which may be suitable.

Caution: Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or other wildlife-if they are not handled or applied properly. Use all pesticides selectively and carefully. Follow recommended practices for the disposal of surplus pesticides and pesticide containers.

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Table 1--Meteorological data, August 20, 1991, Claxton Spray Trials

Day 1

		Han	dar	Forest tech
		22 ft	55 ft	system - 6 ft
Aircraft	Start - 10:15 am			
	Stop - 10:24 am			
Windspeed		3.1 mi/h	3.8 mi/h	5.3 mi/h
Wind dire	ction	238°	244°	270°
Wind gust		4.6 mi/h	5.5 mi/h	NA
Relative.	humidity	85.3 %	76.8 %	89.%
Temperatu	re	83.8°F	83.2°F	82.0°F
Ground				
sprayer	Start - 10:45 am			
	Stop - 11:50 am			
Windspeed		3.7 mi/h	5.4 mi/h	5.2 mi/h
Wind dire	ction	253°	271°	225°
Wind gust		5.5 mi/h	7.2 mi/h	NA
Relative		68.9 %	69.5 %	83.0 %
Temperatu		86.0°F	85.2°F	84.4°F

Table 2--Meteorological data, August 21, 1991, Claxton Spray Trials

Day 2

	Handar		Forest tech
	22 ft	55 ft	system - 6 ft
Aircraft Start - 9:51 am Stop - 10:01 am			
Windspeed Wind direction Wind gust Relative humidity Temperature	0.0 mi/h 277° 0.0 mi/h 69.0 % 78.0°F	0.4 mi/h 281° 0.6 mi/h 65.3 % 80.2°F	3.3 mi/h 315° NA 93.0 %
Ground sprayer Start - 10:15 am Stop - 11:15 am			
Windspeed Wind direction Wind gust Relative humidity Temperature	0.5 mi/h 279° 1.0 mi/h 59.5 % 80.0°F	1.4 mi/h 246° 2.5 mi/h 58.6 % 83.9°F	1.6 mi/h 270° NA 78.0 % 78.3°F

Table 3--Meteorological data, August 22, 1991, Claxton Spray Trials

Day 3

	Han	dar	Forest tech	
	22 ft	55 ft	system - 6 ft	
Aircraft Start - 9:40 am				
Stop - 9:51 am				
Windspeed	5.5 mi/h	1.9 mi/h	0.0 mi/h	
Wind direction	293°	273°	270°	
Wind gust	1.7 mi/h	2.6 mi/h	NA	
Relative humidity	75.9 %	70.9 %	90.0 %	
Temperature	81.0°F	81.0°F	72.4°F	
Ground				
<pre>sprayer Start - 10:07 am</pre>				
Stop - 11:07 am				
Windspeed	0.9 mi/h	1.8 mi/h	1.8 mi/h	
Wind direction	238°	242°	315°	
Wind gust	1.8 mi/h	2.6 mi/h	NA	
Relative humidity	68.7 %	68.2 %	81.0 %	
Temperature	82.3°F	82.3°F	80.1°F	

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Table 4--Aircraft and application parameters, Claxton Spray Trials, August 1991

Parameter	Cessna Ag-Truck		
Aircraft weight (lb/kg)	2236 (1014)		
Wing length (ft/m)	41.67 (12.74)		
Speed (mi/h)	110		
Spray altitude above canopy (ft/m)	10 (3.1)		
Day 1 Swath width (ft/m) Day 2 Day 3	90 (27.4) 110 (33.5) 100 (30.5)		
Nozzle type and size (FF)	8003		
Nozzle orientation	Straight back		
Number of nozzles	38		
Boom pressure - (lb/in ² g)	40		
Application rate gal/acre (1/ha)	1.2 (11.2)		
Spray mixture	2% Bullseye (50 gal water to 1 gal Bullseye)		

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Table 5--FMC 757 Ground-sprayer application parameters, Claxton Ground Spray Trials, August 1991

Parameters	Specifications
Engine	Diesel
Cylinders	4
Horsepower (max at 2800 r/min)	140
Tank Capacity (gal)	500
Maximum number of nozzles	54
Nozzel size and number Spray days 1 and 2 - 1 nozzle each side Spray day 3 - 2 nozzles each side	2 4
Propeller diameter (in/cm)	41 (104.1)
Number of fan blades	7
Unit length (ft/m)	17'4" (5.3)
Height (in/m)	69" (1.75)
Unit weight full tank (est) (lb/kg)	9900 (4490)
System pressure during test (lb/in ² g)	50
Application rate for days 1 and 2 gal/acre (1/ha)	2.88 (26.9)
Application rate for day 3 gal/acre (1/ha)	5.76 (53.8)
Ground speed (mi/h)	2.5
Spray mixture	0.7% Rhodamine WT (100 gal [378.5 L] water and 0.7 gal [2.7 L] Rhodamine).

Valide S-180 757 Ground-sprhyer applicablish personaless files of the Ottom Division (National Section 1991)

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Table 6--Average aircraft spray deposition on tree line samples - Claxton Spray Trials, 1991

Trial Tree		Number of	Drops/cm ²		Fluid ounces/acre	
day	line	samples	Top	Bottom	Top	Bottom
ug. 20, 1991	1	11	3.35	1.68	14.18	3.29
	2	12	10.26	0.75	68.14	0.85
	3	12	5.36	0.63	24.44	0.55
	4	12	11.17	1.15	156.57	1.53
	5	12	8.58	0.15	64.94	0.42
	6	12	6.66	2.35	56.81	0.41
ıg. 21, 1991	1	12	11.21	0.50	65.43	0.47
	2	12	13.76	0.02	32.52	0.02
	3	12	5.12	0.00	21.79	0.00
	4	12	11.97	0.23	135.12	0.17
	5	12	6.86	0.01	26.29	0.01
	6	12	6.04	0.00	22.34	0.00
ug. 22, 1991	1	12	11.13	0.07	78.52	0.06
-	2	12	11.13	0.07	54.21	0.10
	3	12	16.16	0.08	43.24	0.07
	4	12	11.34	0.10	47.88	0.05
	5	12	21.56	0.01	50.81	0.00
	6	12	28.69	0.06	64.83	0.05

Aircraft application rate was 1.2 gal/acre.

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Table 7--Average ground sprayer deposition on tree line samples - Claxton Spray Project, 1991

Trial Tree	Tree	Number of samples	Drops/cm ²		Fluid ounces/acre	
day	ay line		Top	Bottom	Top	Bottom
ug. 20, 1991	1	11	0.48	0.53	1.34	0.85
•	2	12	0.78	3.43	2.26	20.31
	3	12	0.99	2.47	2.80	10.33
	4	12	1.60	3.04	7.27	8.48
	5	12	1.45	1.75	5.06	9.71
	6	12	1.99	1.62	6.65	11.59
ug. 21, 1991	1	12	1.01	0.63	0.81	1.36
•	2	12	1.01	1.36	2.00	5.72
	3	12	0.47	0.42	1.48	3.69
	4	12	1.86	3.95	9.55	28.45
	5	12	0.39	0.32	0.95	0.60
	6	12	1.77	2.33	4.47	9.84
ug. 22, 1991	1	12	0.94	0.64	3.03	7.90
	2	12	0.94	0.64	2.72	2.48
	3	12	2.00	1.75	5.44	10.74
	4	12	3.92	5.30	10.26	14.60
	5	12	1.10	0.37	2.73	1.22
	6	12	3.89	1.64	9.47	10.95

Ground sprayer data equivalent to 1.2 gal/acre.

Table 8--Average aircraft spray deposition on ground line samples - Claxton Spray Trials, 1991

Trial day	Tree line	Number of samples	Drops/cm ²	Fluid ounces/acre
Aug. 20, 1991	1	41	2.54	45.09
•	2	41	4.09	59.99
	3	41	4.35	48.13
	4	41	2.68	21.66
	5	41	2.66	57.92
	6	Cards were	not put out	
Aug. 21, 1991	1	41	8.84	50.83
	2	40	7.30	48.03
	3	40	7.43	77.06
	4	41	6.59	60.80
	5	41	5.15	39.68
	6	41	5.07	37.66
Aug. 22, 1991	1	41	4.36	18.66
	2	41	6.62	61.99
	3	41	9.70	84.96
	4	41	7.68	62.68
	5	40	8.08	67.98
	6	41	7.63	46.70

Aircraft application rate was 1.2 gal/acre.

Table 9--Average ground sprayer deposition on ground line samples - Claxton Spray Trials, 1991

Trial day	Tree line	Number of samples	Drops/cm ²	Fluid ounces/acre
Aug. 20, 1991	1	41	5.30	36.55
y	2	41	6.56	43.63
	3	41	7.18	32.08
	4	41	4.77	22.75
	5	41	6.91	40.07
	6	Cards were	not put out	
Aug. 21, 1991	1	41	2.86	16.35
	2	40	2.36	14.66
	3	40	2.24	15.04
	4	41	3.03	17.34
	5	41	2.23	14.35
	6	41	2.50	12.38
Aug. 22, 1991	1	41	1.55	17.44
	2	41	2.32	19.77
	3	41	2.95	25.98
	4	41	3.55	23.48
	5	40	3.04	21.76
	6	41	2.26	17.52

Ground spray rate equivalent to 1.2 gal/acre.

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Table 10--Ground spray deposition on drift line samplers - Claxton Spray Trials, 1991

1.01 1.01		Drift 11nc	l lnc 1	Drift line 2	Inc 2	Drift line	line 3	Drift Hac	Inc 4	Drift line 0	100 0
7.72 34.90 7.30 91.43 7.93 28.03 7.17 33.10 NA 6.34 3.12.13 0.15.00 0.16.2 0.16.2 0.00	ا ۾	ops/cm ²	4	Drops/cm ²	fluid ounces/acre	Drops/cm ²	ıi l	Drops/cm ²	아 그	Drops/cm	fluid ounces/acre
7.7.2 2.5.19 9.1.43 3.93 2.8.03 7.17 3.10 NA 2.4.1 1.2.10 0.15 0.16 0.02 0.00 0.00 0.00 NA 1.3.4 1.2.11 0.10 0.00											
1.63	9	در ر	77	7 30	01 //3	1 93	27. 03	717	33 10	42	N.A.
1.43 2.1.14 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.0	2	2	20 75	200.01	88.43	20.2	28.80	1 63	6 73	C 2	K 42
1.83 6.19 2.214 0.000 0.	0		12.12	2 20	37.67	100	00.7	20.1	27.0		Y 4
1.83	00.	14.7	12.10	00.30	5.6	0	00.0	0.0	00.0	W.	V.
1.83 6.19 2.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	100	4.30	21.14	0.00	79.0	0.10	0.02	0.00	0.00	AN:	Y.
1.83	+150	1.40	3.95	0.03	0.10	0.00	0.00	0.00	0.00	NA	NA
1.83	+200	0.31	0.73	0.03	0.10	0.00	00.0	0.00	00.00	N A	N
0.08	+250	0.34	1.10	00.0	00.0	00.00	0.00	0.00	00.0	٧V	NA
NA	+300	90.0	0.01	0.00	00.0	NA	NA	0.00	0.00	NA	NA
1.83 6.19 2.95 21.09 wc w w w w w w w w	+350	NA	٧V	0.00	0.00	NA	VV	00.00	00.0	V.	NA
1.83	4400	N.	NA	00.00	00.00	NA	V.	00.00	0.00	NA	NA
1.83 6.19 2.35 21.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00	4450	N N	NA	NA	AN	N N	2	00 0	00.0	Y N	Y N
1.83 6.19 2.95 21.09	+500	NA	NA	NA	VV	NA NA	N N	00.00	0.00	N A	Z Z
1.83 6.19 2.35 21.09 wc 2.31 wc 1.99 9.83 NA											
1.84 26.19 2.34 21.09	Day 2										
5.90 20.18 5.39 4.129 6.55 wc wc NA	25	1 83	6 10	7 05	00 10		:	•	0	***	•
8.00 56.10 3.6.10 11.00 11.00 10.00	0	00.4	00.13	76.6	20.12	3 6	מי ני	1.99	9.03	K N	NA :
1.24	0	06.0	50.10	2.34	50.11	0.21	37.70	S	NC NC	V.	NA.
1.24 0.38 0.47 2.13 1.59 1.51 0.00 0.00 NA	00.	9.00	26.10	10.5	17.43	77.4	6.73	OR C	3 6	YZ :	NA.
U.26 U.38 U.37 U.39 U.31 U.33 U.31 U.33 U.31 U.32 U.31 U.33 U.31 U.32 U.33 U.32 U.33 U.33 <th< td=""><td>001</td><td>1.24</td><td>4.20</td><td>0 . 10</td><td>5.23</td><td>1.99</td><td>1.31</td><td>0.00</td><td>00.00</td><td>YZ :</td><td>NA</td></th<>	001	1.24	4.20	0 . 10	5.23	1.99	1.31	0.00	00.00	YZ :	NA
W.C. W.C. 0.13 0.10 0.00 0.00 0.00 0.00 0.00 0.0	001	0.26	0.38	0.47	2.15	0.65	0.1/	0.00	00.00	NA	NA
W.C. W.C. W.C. O.01 O.02 NA NA O.00 NA NA NA NA NA NA 0.00 0.00 NA NA NA NA NA NA 0.00 0.00 NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA 0.00 0.00 NA NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA 0.00 0.00 0.00 0.00 NA NA NA NA NA NA 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 <t< td=""><td>200</td><td>2</td><td>MC</td><td>0.21</td><td>0.33</td><td>0.10</td><td>0.008</td><td>0.00</td><td>00.00</td><td>NA</td><td>NA NA</td></t<>	200	2	MC	0.21	0.33	0.10	0.008	0.00	00.00	NA	NA NA
NA NA O.03 O.04 NA NA O.00 NA NA NA NA NA NA NA 0.00 NA NA NA NA NA NA NA 0.00 NA NA NA NA NA NA 0.00 0.00 NA NA NA NA 0.00 0.00 0.00 0.00 NA A, 00 17,33 3.16 5.38 41.20 2.69 32.28 7.86 28.86 0.80 5.17 26.55 0.03 4.05 2.40 11.23 0.05 0.00 0.00 0.08 0.17 0.06 0.01 0.05 0.05 0.06 0.01 0.06 0.01 0.00<	750	3	23	0.18	0.81	0.05	00.00	0.00	00.00	¥N.	NA
NA NA NA 0.03 0.004 NA NA 0.00 0.00 NA NA NA 0.00 0.00 NA NA NA NA NA 0.00 0.00	300	3	MC WC	0.03	0.04	NA	Y V	00.0	00.0	NA	NA
NA N	350	Z.	NA	0.03	0.004	Y N	Y N	0.00	00.00	V.	NA
3.16 31.04 5.38 41.20 2.69 33.66 4.07 8.92 2.84 1.20 2.09 8.3 6.62 33.28 7.86 28.86 0.01 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0	007	V.	NA	0.05	0.008	V.	NA	0.00	00.00	NA	NA
3.16 31.04 5.38 41.20 2.69 33.66 4,07 8.92 2.84 1.20 5.17 26.55 0.83 6.62 32.28 7.86 28.86 0.80 0.90 0.93 1.16 15.84 0.12 0.26 32.28 7.86 28.86 0.80 0.90 0.17 0.64 0.93 0.04 0.05 0.00 0.00 0.00 0.00 0.00 0.00	450	NA N	NA NA	NA	V.	Y.	NA NA	00.0	00.00	NA	NA
3.16 31.04 5.38 41.20 2.69 33.66 4.07 8.92 2.84 1 4.00 17.33 3.16 15.84 6.62 32.28 7.86 28.86 0.89 5.17 26.55 0.83 4.95 2.40 11.23 0.05 0.01 0.38 1.97 0.21 0.64 0.98 4.26 0.05 0.01 0.09 0.17 0.06 0.03 0.04 0.00 0.00 0.09 0.17 0.06 0.03 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	200	V V	Y.	AN.	NA	NA	NA	0.00	00.00	NA	NA
3.16 31.04 5.38 41.20 2.69 33.66 4.07 8.92 2.84 4.00 17.33 3.16 15.84 6.62 32.28 7.86 28.86 0.80 6.03 17.33 3.16 15.84 6.62 33.28 7.86 28.86 0.09 0.38 1.97 0.21 0.64 0.98 4.26 0.03 0.04 0.01 0.09 0.17 0.06 0.07 0.02 0.00											
3.16 31.04 5.38 41.20 2.69 33.66 4.07 8.92 2.84 4.00 17.33 3.16 15.84 6.62 32.28 7.86 28.86 0.80 5.17 26.55 0.083 4.95 2.40 11.23 0.05 0.04 0.01 0.38 1.97 0.021 0.64 0.98 4.26 0.03 0.04 0.01 0.09 0.17 0.06 0.07 0.07 0.00											
4.00 17.33 3.16 15.84 6.62 32.28 7.86 28.86 0.80 5.17 26.55 0.83 4.95 2.40 11.23 0.05 0.08 0.01 0.09 0.17 0.06 0.01 0.02 0.00 0.00 0.00 0.08 0.17 0.06 0.03 0.04 0.02 0.00 0.00 0.09 0.17 0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	-50	3.16	31.04	5.38	41.20	5.69	33.66	4.07	8.92	2.84	15.40
5.17 26.55 0.83 4,95 2.40 11.23 0.05 0.09 0.01 0.38 1.97 0.21 0.64 0.98 4.26 0.03 0.04 0.01 0.08 0.17 0.06 0.17 0.04 0.00 0.00 0.00 0.08 0.17 0.06 0.03 0.04 0.02 0.00 0.00 0.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	0	7 .00	17.33	3.16	15.84	6.62	32.28	7.86	28.86	0.80	1.71
0.38 1.97 0.21 0.64 0.98 4.26 0.03 0.04 0.01 0.09 0.17 0.06 0.17 0.01 0.02 0.00 0.00 0.00 0.08 0.17 0.06 0.03 0.04 0.05 0.00 0.00 0.00 0.00 0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	+50	5.17	26.55	0.83	4.95	2.40	11.23	0.05	0.08	0.01	0.025
0.09 0.17 0.06 0.17 0.01 0.02 0.00 0.00 0.00 0.08 0.17 0.06 0.03 0.04 0.05 0.00 0.	100	0.38	1.97	0.21	0.64	0.98	4.26	0.03	0.04	0.01	0.025
0.08 0.17 0.06 0.03 0.04 0.05 0.00 <th< td=""><td>150</td><td>0.0</td><td>0.17</td><td>90.0</td><td>0.17</td><td>0.01</td><td>0.05</td><td>00.00</td><td>00.00</td><td>00.0</td><td>0.00</td></th<>	150	0.0	0.17	90.0	0.17	0.01	0.05	00.00	00.00	00.0	0.00
0.06 0.09 0.09 0.04 0.25 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 <td>500</td> <td>0.08</td> <td>0.17</td> <td>90.0</td> <td>0.03</td> <td>0.04</td> <td>0.004</td> <td>00.0</td> <td>00.00</td> <td>0.00</td> <td>00.00</td>	500	0.08	0.17	90.0	0.03	0.04	0.004	00.0	00.00	0.00	00.00
0.00 0.00 <th< td=""><td>.250</td><td>90.0</td><td>0.09</td><td>0.00</td><td>00.0</td><td>0.04</td><td>0.25</td><td>00.0</td><td>00.00</td><td>00.00</td><td>00.00</td></th<>	.250	90.0	0.09	0.00	00.0	0.04	0.25	00.0	00.00	00.00	00.00
0.00 0.00 0.00 NA NA 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 NA NA NA NA 0.00 0.00 0.00 0.00 NA NA NA NA NA 0.00 0.00 0.00 0.00 NA NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA 0.00 0.00 <td< td=""><td>300</td><td>00.00</td><td>00.0</td><td>00.0</td><td>00.0</td><td>NA</td><td>NA</td><td>00.00</td><td>00.00</td><td>00.00</td><td>0.00</td></td<>	300	00.00	00.0	00.0	00.0	NA	NA	00.00	00.00	00.00	0.00
0.00 0.00 <th< td=""><td>1350</td><td>00.0</td><td>00.0</td><td>0.00</td><td>0.00</td><td>NA</td><td>VN</td><td>0.00</td><td>00.00</td><td>00.00</td><td>00.00</td></th<>	1350	00.0	00.0	0.00	0.00	NA	VN	0.00	00.00	00.00	00.00
0.00 0.00 NA NA NA 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0 0.00 0.00 0.00 0.0 0.00 0.00 0.00 0.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	400	00.0	0.00	0.00	0.00	NA	< 2	00.0	00.00	00.00	00.00
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 NA NA NA NA NA 0.00 0.00 0.00 0.00 NA NA NA NA NA 0.00	450	0.00	00.0	N.	¥Z	NA NA	AN	00.00	00.00	00.00	00.00
0.00 0.00 NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA NA 0.00	500	00.0	0.00	NA NA	< X	N.	A'N	00.00	00.00	0.00	00.00
0.00 0.00 NA NA NA NA NA 0.00	550	00.00	00.0	Z	V.	N.	××	NA	NA	00.00	00.00
0.00 0.00 NA NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA 0.00	009	00.00	00.0	Y Z	V.	N N	e v	Y.	Z Z	00.00	0.00
0.00 0.00 NA NA NA NA NA NA NA NA 0.00 0.00	1650	00.00	00.00	×2	AN	XX	V Z	×	VN	00.0	00.00
0.00 0.00 NA NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA 0.00	• 700	0.00	00.0	VV	VN	××	V.	< z	VZ.	00.00	00.00
0.00 0.00 NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA 0.00	+750	00.00	00.0	NA	V.	Y.	× 2	Y.	NA	00.00	00.00
0.00 0.00 NA NA NA NA NA NA NA 0.00 0.00	*800	0.00	00.00	V	VN	X	VX	NA N	Z Z	00.0	00.00
0.00 0.00 NA NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA 0.00	.850	0.00	00.0	V Z	×	× Z	N.	Y.	V.	00.00	0.00
0.00 0.00 NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA 0.00	006	0.00	00.00	V.V.	N N	N.	< x	< z	V.	00.00	0.00
0.00 0.00 NA NA NA NA NA 0.00	.950	0.00	00.00	NA	NA	X	<z< td=""><td>VZ.</td><td>VV</td><td>00.00</td><td>00.00</td></z<>	VZ.	VV	00.00	00.00
	1000	0.00	00.00	NA	VV	NA	NA	AN	NA	00.00	0.00

Ground sprayer data equivalent to 1.2 gal/acre. NA = not applicable; we = wet card



Tablo 11--Aircraft spray deposition on drift line samplers - Claxton Spray Triais, 1991

1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	1.53 1.52 1.50 0.00		Drift line	11ne 1	Drift line	11ne 2	Drift	Drift line 3	Drift lin	ان	Drift linc	10
2.19 17.22 0.00 0.00 0.00 0.00 1.36 0.00 1.36 0.00 1.36 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	2.15		Drops/cm ²	1	Drops/cm ²	fluld ounccs/acre	Drops/cm		Drops/cm		Drops/cm ²	1 21
2.14	1.59 17.22 0.000 0											
3.44 46.51 0.00 0.00 0.00 0.13 10.41 MA 1.23 6.25 6.26 0.00 0.	2.14 46.51 0.00 0.00 0.00 0.00 1.38 10.41 MA 2.19 17.27 0.00 0.00 0.00 0.00 0.00 1.38 10.41 MA 2.19 17.27 0.00 0.00 0.00 0.00 0.00 0.00 1.85 MA 2.19 17.27 0.00 0.00 0.00 0.00 0.00 0.00 0.00	-50	3.50	17.22	0.00	00.00	3.19	87.00	2.56	7.08	N	V.
3.31 31.21 0.00 0.00 0.00 0.00 0.05 2.04 NA	1.63 1.27 0.00 0.00 0.00 0.00 0.50 2.04 MA	0	2.44	46.51	0.00	00.00	00.0	00.00	1.38	10.41	NA	NA
1.13	1.13	• 50	3.31	31.21	00.0	00.00	0.00	00.0	0.50	2.04	NA	V
1.63 6.28 0.00	1.63	100	2.19	17.27	0.00	00.0	0.00	00.00	0.19	1.85	NA	NA
6.5 2.63 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	1.59 5.65 0.00	150	1.63	6.28	0.00	0.00	00.00	00.0	0.00	00.00	VA	NA
1.13	1.69 5.59 1.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	00	69.	2.63	00.00	00.00	0.00	00.00	00.0	00.00	NA	NA
1.13 0.15 0.00 0.00 NA NA O.00 0.00 NA NA NA 0.00 0.00 NA NA NA 0.00 0.00	1.13	50	69.	5.59	00.0	00.00	00.0	00.00	00.0	00.00	NA	NA
NA	NA	00	.13	0.15	00.0	0.00	NA	NA	00.00	00.00	NA	NA
NA	NA	350	NA	NA	0.00	00.00	NA	NA	00.0	00.00	NA	NA
NA	NA	00	NA	NA	00.0	00.00	NA	NA	00.0	00.00	NA	NA
NA N	NA N	20	NA	NA	NA	VN	NA	NA	0.00	00.00	NA	NA
6.20 76.56 7.63 80.52 wc wc 4.29 7.71 NA	6.20 76.56 7.63 80.52 wc 4.29 7.71 NA	00	V V	NA	NA	٧N	NA	VN	00.00	00.00	NA	NA
6.20 76.56 7.63 80.52 wc 4.29 7.71 NA	6.20 76.56 7.63 80.52 wc wc 4.29 7.71 NA											
6.20 76.56 7.63 80.52 2.84 4.29 7.71 NA A NA N	6.20											
2.19	2.19 0.98 5.18 13.06 2.81 26.87 wc wc NA	.50	6.20	76.56	7.63	80.52	WC	WC	4.29	7.71	NA	NA
15.00 36.98 0.25 0.168 1.81 1.60 1.80 0.44 9.33 NA 15.50 6.89 1.63 0.25 0.26 0.06 0.04 0.13 0.15 NA 16.50 6.89 1.63 0.28 0.05 0.06 0.04 0.13 0.15 NA 16.50 0.18 0.18 0.05 0.05 0.04 0.13 0.15 NA 16.50 0.18 0.18 0.05 0.05 0.04 0.13 0.15 NA 16.50 0.18 0.18 0.016 NA 16.51 0.25 0.18 0.010 0.00 NA 16.52 0.18 0.010 NA 16.53 0.18 0.010 0.00 0.010 NA 16.54 0.18 0.010 NA 16.55 0.18 0.00 0.00 0.00 16.57 0.18 0.18 0.18 0.18 16.57 0.25 0.25 0.25 0.19 0.25 16.58 0.25 0.25 0.25 0.10 0.00 0.10 16.59 0.11 0.25 0.25 0.10 0.00 0.00 16.50 0.11 0.14 0.25 0.25 0.10 0.00 0.10 16.50 0.11 0.14 0.15 0.00 0.00 0.10 16.50 0.11 0.14 0.14 0.15 0.00 0.00 16.50 0.11 0.14 0.14 0.14 0.00 0.00 0.00 16.50 0.11 0.14 0.14 0.14 0.00 0.00 0.00 16.50 0.11 0.14 0.14 0.14 0.00 0.00 0.00 16.50 0.11 0.14 0.14 0.14 0.00 0.00 0.00 16.50 0.11 0.14 0.14 0.14 0.14 0.14 0.00 16.50 0.11 0.14 0.14 0.14 0.14 0.14 0.14 16.50 0.11 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 16.50 0.11 0.14	9.00 48.91 0.50 0.66 1.81 1.60 uc uc uc uc uc uc uc u	0	2.19	0.98	5.18	31.06	2.88	26.87	WC	WC	NA	N
15.50	15.50	20	9.00	36.98	0.50	1.68	1.81	1.60	23	3	NA	AN
6.56 6.69 1.63 0.99 0.50 0.46 0.81 1.63 NA	6.56 6.89 1.63 0.99 0.50 0.46 0.81 1.48 NA	00	15.50	48.91	0.25	91.0	0.56	0 67	1 88	5 60	V	. 2
WE WE WE 1.31 0.35 0.00 0.04 0.13 0.15 NA NA NA 0.19 0.00 0.14 0.13 NA NA NA 0.19 0.00 0.14 0.13 NA NA NA 0.19 0.00 0.14 0.13 0.15 NA NA NA NA 0.19 0.00 0.00 0.14 0.13 0.15 NA	w.c. w.c. 1.31 0.36 0.00 0.04 9.33 NA w.c. w.c. 0.63 0.18 0.00 0.04 0.13 0.15 NA w.c. w.c. 0.19 0.01 NA NA 0.00 0.01 NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA NA 0.00 0.00 NA NA NA NA 0.00 0.00 0.00 NA NA A NA NA NA 0.00 0.00 0.00 NA NA NA NA NA 0.00 0.00 0.00 NA A NA NA NA 0.00 0.00 0.00 NA A NA NA NA NA 0.00 0.00 0.00 B C C C C C	20	6.56	6 89	1 63	0 95	0.50	0 46	0.8	1 7.8	V N	V.
MA NA 0.19 0.00 0.13 0.15 NA	6-13 43.72 7.57 60.22 6.50 77.23 5.67 19.68 3.44 6-13 43.72 7.57 60.22 6.50 77.23 5.67 19.68 3.44 10 10 0.01 NA NA 0.00 NA NA 10 10 0.01 NA NA 0.00 0.00 NA 10 10 0.01 NA NA 0.00 0.00 NA 10 10 0.01 NA NA 0.00 0.00 NA 10 10 0.01 NA NA NA 0.00 0.00 NA 10 10 0.01 NA NA 0.00 0.00 0.00 NA 10 10 0.01 0.01 0.00 0.00 0.00 0.00 NA 11 10 0.02 0.01 0.00 0.00 0.00 0.00 NA NA 0.00 <td>2</td> <td>2 3</td> <td>) A</td> <td>1.3</td> <td>36.0</td> <td>00.0</td> <td>0.0</td> <td>77</td> <td>0 23</td> <td>V N</td> <td>C . Z</td>	2	2 3) A	1.3	36.0	00.0	0.0	77	0 23	V N	C . Z
MA NA NA 0.19 0.16 NA NA 0.19 0.22 NA NA NA 0.00 0.00 NA NA NA 0.19 0.22 NA NA NA 0.19 0.22 NA NA NA 0.20 0.00 NA NA NA NA NA 0.00 0.00 NA	MA NA NA O.19 0.16 NA NA O.19 0.22 NA NA NA O.00 0.00 NA NA NA NA O.19 0.22 NA NA NA NA O.19 0.22 NA NA NA NA NA O.00 0.00 NA NA NA NA NA NA O.00 0.00 NA	200	2 2	2 2	0.63	0.30	00.0	80.0	7.00	2.0	V 4 N	
NA	NA	2	2 5		38	21.0	. S	0 2	21.0	21.0	C 4 2	V * 12
NA N	NA NA NA NA NA NA NA NA 0.00 0.00 NA NA NA NA 0.00 0.00	2 6	3 2	3 2	0.00	0.10	× × ×	2 2	0.13	27.0	Z Z	V. 2
6.13 43.72 7.57 66.22 6.50 77.23 5.67 19.68 3.44 2.19 11.20 8.86 46.10 9.17 66.42 2.00 0.00 0.00 0.00 0.00 0.00 0.00 0	6.13	2 6	. v	V 42	77	0.01	× ×	Z Z Z	00.0	00.0	2 2	V.
6.13 43.72 7.57 60.22 6.50 77.23 5.67 19.68 3.44 2.19 11.20 8.86 46.10 9.17 66.42 2.00 0.00 0.00 0.00 0.00 0.00 0.00 0	6.13	200	2 2	¥ ¥ ¥	7 2	0.0	< × ×	X	00.0	0.00	V V	V ~ Z
6.13 43.72 7.57 60.22 6.50 77.23 5.67 19.68 3.44 2.19 11.20 8.86 46.10 9.17 66.42 2.00 7.14 31.09 3.53 2.64 2.19 1.70 7.57 21.26 2.00 33.81 3.53 2.64 2.19 1.70 7.57 21.26 5.33 5.64 2.19 1.70 7.57 21.26 5.33 3.64 2.19 1.70 7.57 21.26 5.33 3.63 2.44 2.19 1.57 2.50 0.71 0.38 0.00 0.19 0.59 3.13 3.13 3.60 1.42 0.25 0.00 0.00 0.19 0.59 3.13 3.13 3.60 1.42 0.25 0.00 0.00 0.19 0.59 3.13 3.13 3.60 1.42 0.25 0.00 0.00 0.00 0.00 0.00 0.00 0.0	6.13	20	¥ 2	AN	< N	< Z	42	V 2	8 6	00.0	C 2	V N
6.13 43.72 7.57 60.22 6.50 77.23 5.67 19.68 3.44 2.19 1.41 4.91 11.20 8.86 46.10 9.17 66.42 2.00 2.00 2.19 11.20 8.86 46.10 9.17 66.42 2.00 2.00 33.81 3.25 14.55 6.33 56.47 4.45 77.53 5.33 5.03 8.360 1.42 0.94 0.55 0.19 0.59 3.13 8.00 2.14 11.57 2.50 0.71 0.38 0.02 0.19 0.59 3.13 8.00 2.14 1.94 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.0	6-13 43.72 7.57 60.22 6.50 77.23 5.67 19.68 3.44 2-19 1.41 4.91 11.20 8.86 46.10 9.17 66.42 2.00 7.14 31.09 3.25 14.55 6.33 56.47 4.45 77.53 5.33 7.14 31.09 3.25 14.55 6.33 56.47 4.45 77.53 5.33 7.14 31.09 3.25 12.64 2.19 1.70 7.57 21.26 5.91 7.69 33.01 3.53 2.64 2.19 1.70 7.57 21.26 5.91 7.69 33.01 3.53 2.64 2.19 1.45 0.38 0.02 0.01 0.59 3.13 7.60 4.19 1.94 0.75 0.38 0.02 0.13 0.59 3.13 7.60 4.19 1.94 0.75 0.38 0.00 0.00 0.00 0.00 7.60 0.13 0.30 0.04 0.75 0.00 0.00 0.00 7.60 0.13 0.30 0.04 0.75 0.00 0.00 0.00 7.60 0.13 0.30 0.00 0.00 0.00 7.60 0.11 0.00 0.00 0.00 0.00 7.60 0.11 0.00 0.00 0.00 0.00 7.60 0.11 0.00 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 0.00 7.60 0.10 0.00 0.00 0.00 0.00 7.60 0.00 0.00 0.00 0.00 7.60 0.00 0.00 0.00 0.00 0.00 7.60 0.00 0.00 0.00 0.00 7.60 0.00 0.00 0.00 0.00 7.60 0.00 0.00 0.00 0.00 7.60 0.00 0.00 0.00 0.00 7.60 0.00 0.00 0.00 0.00 7.60 0.00 0.00 0.00 0.00 7.60 0.00 0.00 0.00 7.60 0.00 0.00 0.00 0.00 7.60 0.00 0.00 0.00 0.00 7.60 0.00 0.00 0.00 0.00 7.60 0.00 0.00 0.00 0.00 7.60 0.00 0.00 0.00 0.00 7.60 0.00 0.00 0.00 0.00 7.60 0.00 0.00 0.00 0.00 7.60 0.00 0.00 0.00 0.00 7.60 0.00 0.00 0.00 0.00 7.60 0.00 0.00 0.00 7.60 0.00 0.00 0.00 0.00 7.60 0.00 0.00 0.00 0.00 7.60 0.00 0.00 0.00 7.60 0.00 0.00 0.00						5	4	8	9	5	V
6.13 43.72 7.57 60.22 6.50 77.23 5.67 19.68 3.44 2.19 11.41 4.91 11.20 8.86 46.10 9.17 66.42 2.00 7.14 31.09 3.25 14.55 6.33 56.47 4.45 77.53 5.33 5.69 33.81 3.25 14.55 6.33 56.47 4.45 77.53 5.33 5.69 33.81 3.25 14.55 6.33 56.47 4.45 77.53 5.33 5.69 33.81 3.53 2.64 2.19 1.70 7.57 21.26 5.91 3.60 4.19 11.81 0.046 0.056 0.019 0.59 3.13 3.60 4.19 11.81 0.046 0.06 0.00 0.00 0.05 2.44 4.19 11.81 0.046 0.06 0.00 0.00 0.00 2.44 4.19 11.93 0.21 NA NA NA 0.00 0.00 0.03 1.13 0.20 NA NA NA NA 0.00 0.00 0.03 0.25 0.20 NA 0.00 0.05 0.01 NA 0.00 0.05 0.01 NA 0.00 0.10 0.01 NA	6.13											
2.19 1.14 4.91 11.20 8.050 7.14 4.55 5.09 2.00 2.19 17.05 2.00 2.10 31.09 3.25 14.25 6.33 56.47 4.45 77.53 5.33 5.44 5.91 11.20 8.050 0.94 0.55 0.81 8.80 14.75 5.91 21.26 5.91	2.11 4.71 4.91 10.22 8.050 4.610 9.17 66.42 2.00 7.14 31.09 3.25 14.55 6.33 56.47 4.45 77.53 5.33 5.44 7.31 11.20 8.86 46.10 9.17 66.42 2.00 7.14 31.09 3.25 14.55 6.33 56.47 4.45 77.57 2.50 8.86 1.46.10 9.17 66.42 2.00 7.14 7.31 11.57 2.50 0.71 0.38 0.02 0.19 0.05 0.19 0.59 3.13 7.14 7.31 11.57 2.50 0.71 0.38 0.02 0.01 0.00 0.00 0.00 0.00 0.38 7.44 1.19 1.94 0.75 NA NA NA NA 0.00 0.00 0.04 0.38 1.13 0.24 1.13 0.21 NA NA NA NA 0.00 0.00 0.04 0.05 0.00 0.00 0.04 0.00 0.00	9	6 13	1,3 7,3	7 5 7		3		,	9		
7.14 31.09 3.25 14.55 6.33 56.47 4.45 77.55 5.33 56.49 33.81 3.25 14.55 6.33 56.40 7.57 77.55 5.33 56.40 1.42 0.94 0.55 0.81 8.80 14.75 5.33 3.13 5.67 25.08 3.60 0.71 0.38 0.02 0.19 0.59 14.75 5.33 3.13 5.64 4.19 1.81 0.46 0.06 0.00 0.13 0.44 1.19 1.94 0.75 0.71 0.38 0.00 0.13 0.44 1.10 0.71 0.38 0.00 0.13 0.44 1.10 0.72 0.73 0.73 0.73 0.73 0.73 0.73 0.73 0.73	7.14 31.09 3.25 14.55 6.33 56.47 4.45 77.53 5.33 5.69 33.81 3.53 14.55 6.33 56.47 4.45 77.53 5.33 5.69 5.69 33.81 3.53 2.64 2.19 1.70 7.57 21.26 5.91 1.70 7.57 21.26 5.91 1.70 7.57 21.26 5.91 1.70 7.57 21.26 5.91 1.70 7.57 21.26 5.91 1.70 7.57 21.26 5.91 1.70 7.57 21.26 5.91 1.70 7.57 21.26 5.91 1.70 7.57 21.26 5.91 1.70 7.57 21.26 5.91 1.70 7.57 21.26 5.91 1.70 1.81 0.46 0.06 0.00 0.13 0.44 1.44 0.75 0.24 0.75 0.20 0.00 0.00 0.00 0.00 0.00 0.00 0.0	2 0	0.13	1 11	1.0.1	11 20	9 86	11.23	0.07	19.68	3.44	3 30
5.69 33.81 5.69 33.81 5.69 33.81 5.69 33.81 5.69 33.81 5.69 33.81 5.69 5.67 5.69 6.69 6.69 6.69 6.69 6.69 6.69 6.69	5.67 25.08 33.81 3.53 2.64 2.19 1.07 7.57 21.26 5.91 3.60 2.60 33.81 3.53 2.64 2.19 1.07 7.57 21.26 5.91 3.13 3.60 1.42 0.94 0.55 0.81 8.80 14.75 2.50 0.71 0.38 0.02 0.19 0.59 3.13 3.3 3.40 1.42 0.94 0.05 0.01 0.00 0.00 0.38 3.13 3.40 1.94 0.75 NA NA NA 0.00 0.00 0.00 0.38 1.44 1.19 1.94 0.75 NA NA 0.00 0.00 0.00 0.38 1.13 0.21 NA	20	71.7	31.41	3 25	11.50	00.00	56.17	7.1.7	77 57	5.00	33.00
5.67 25.08 3.60 1.42 0.94 0.55 0.19 6.59 1.75 1.75 1.75 1.75 2.50 0.71 0.38 0.02 0.19 0.59 1.75 1.75 1.75 1.75 1.75 1.75 1.75 1.75	5.67 25.08 3.60 1.42 0.34 0.55 0.81 8.80 14.75 3.15 3.60 1.42 0.38 0.02 0.19 0.59 3.13 3.15 3.60 1.42 0.38 0.02 0.19 0.59 3.13 3.15 3.60 0.71 0.38 0.02 0.19 0.59 3.13 3.13 0.21 NA	2 2	7 60	33.81	2.52	77.77	0.00		1 1 1	20.17	. u	10.00
2.50	7.57 2.50 0.71 0.34 0.52 0.51 0.59 3.13 3.60 4.19 1.81 0.46 0.06 0.00 0.13 0.44 1.44 2.44 4.19 1.94 0.75 NA NA 0.00 0.00 0.00 0.38 2.44 1.07 1.13 0.21 NA NA 0.00 0.00 0.00 0.00 0.69 0.14 1.56 0.78 0.94 0.73 NA NA NA 0.00	3 6	7.07	10.00	5,5	2.04	61.7	0.10	1.0	07.12	16.6	10.48
11.27 (2.75) (2.	1.51 11.57 2.50 0.71 0.38 0.02 0.19 0.59 3.13 3.13 3.14 4.19 1.81 0.46 0.06 0.00 0.13 0.44 1.44 2.49 1.81 0.75 NA NA 0.00 0.00 0.38 0.38 1.56 0.78 0.94 0.75 NA NA NA 0.00 0.00 0.06 0.38 0.44 1.07 1.13 0.21 NA NA NA 0.00 0.00 0.00 0.44 1.13 0.25 0.25 NA NA NA 0.00 0.00 0.00 0.25 0.25 0.25 NA	2 8	0.0	27.00	00.0	24.1	0.34	0.00	0.01	00.00	14.7	23.92
2.44 4.19 1.31 0.46 0.00 0.13 0.44 1.07 1.31 0.46 0.00 0.00 0.13 0.44 1.07 1.13 0.21 NA NA 0.00 0.00 0.09 0.69 1.34 0.25 NA NA NA 0.00 0.00 0.04 0.13 0.25 0.20 NA	2.44 4.19 1.34 0.46 0.06 0.00 0.13 0.44 1.44 1.09 1.94 0.75 NA NA 0.00 0.00 0.38 0.44 1.09 0.25 NA NA NA 0.00 0.00 0.69 0.69 1.34 0.23 NA NA 0.00 0.00 0.04 1.34 0.25 NA NA 0.00 0.00 0.04 0.44 1.03 0.30 NA NA NA NA 0.00 0.00 0.04 0.25 0.25 0.20 NA	3 5	10.5	11.57	6.30	0.71	0.38	0.02	0.19	6.0	5.13	9.86
2.44 4.19 1.94 0.75 NA NA 0.00 0.00 0.38 1.34 1.34 1.34 0.25 NA NA NA 0.00 0.00 0.05 0.44 1.34 1.34 0.25 NA NA 0.00 0.00 0.00 0.44 1.34 0.39 0.30 NA NA NA 0.00 0.00 0.00 0.13 0.38 0.39 0.01 NA	2.44 4.19 1.94 0.75 NA NA 0.00 0.00 0.38 1.54 0.73 1.13 0.21 NA NA 0.00 0.00 0.06 1.56 0.30 NA NA NA 0.00 0.00 0.04 1.13 0.31 NA NA NA 0.00 0.00 0.04 0.25 0.07 NA NA NA NA 0.00 0.00 0.69 0.01 NA NA NA NA 0.00 0.00 0.69 0.01 NA NA NA NA NA 0.00 0.60 0.01 NA NA NA NA NA 0.00 0.19 0.01 NA NA NA NA NA 0.00 0.19 0.01 NA NA NA NA 0.00 0.19 0.01 NA	200	3.60	61.4	1.81	0.46	0.06	00.0	0.13	0.44	1.44	0.75
2.44 1.07 1.13 0.21 NA NA 0.00 0.00 0.69 1.56 0.78 0.94 0.73 NA NA NA 0.00 0.00 0.04 1.13 0.30 NA NA NA NA 0.00 0.00 0.01 0.94 0.07 NA NA NA NA 0.00 0.00 0.02 0.95 0.02 NA NA NA NA NA NA 0.00 0.69 0.01 NA NA NA NA NA NA 0.00 0.56 0.01 NA NA NA NA NA NA NA 0.00 0.59 0.01 NA NA NA NA NA NA NA 0.00 0.50 0.01 NA NA NA NA NA NA 0.00 0.02 0.01 NA NA NA NA NA 0.00 0.02 0.01 NA NA NA NA 0.00 0.19 0.02 NA NA NA NA 0.00 0.19 0.02 NA NA <td>2.44 1.07 1.13 0.21 NA NA 0.00 0.00 0.69 1.56 0.78 0.94 0.73 NA NA NA 0.00 0.00 0.04 1.15 0.30 NA NA NA NA 0.00 0.00 0.01 0.94 0.03 NA NA NA NA 0.00 0.00 0.00 0.95 0.01 NA NA NA NA NA NA 0.00 0.56 0.01 NA NA NA NA NA NA 0.00 0.50 0.01 NA NA NA NA NA NA 0.00 0.00 0.17 NA NA NA NA NA NA NA 0.00 0.00 0.17 NA NA NA NA NA NA NA NA 0.00 0.00 0.17 NA NA NA NA NA NA NA 0.00 0.19 0.01 NA NA NA NA NA NA 0.00 0.19 0.01 NA NA NA NA NA</td> <td>3</td> <td>7.44</td> <td>4.19</td> <td>1.94</td> <td>0.75</td> <td>V N</td> <td>V V</td> <td>0.00</td> <td>00.00</td> <td>0.38</td> <td>0.16</td>	2.44 1.07 1.13 0.21 NA NA 0.00 0.00 0.69 1.56 0.78 0.94 0.73 NA NA NA 0.00 0.00 0.04 1.15 0.30 NA NA NA NA 0.00 0.00 0.01 0.94 0.03 NA NA NA NA 0.00 0.00 0.00 0.95 0.01 NA NA NA NA NA NA 0.00 0.56 0.01 NA NA NA NA NA NA 0.00 0.50 0.01 NA NA NA NA NA NA 0.00 0.00 0.17 NA NA NA NA NA NA NA 0.00 0.00 0.17 NA NA NA NA NA NA NA NA 0.00 0.00 0.17 NA NA NA NA NA NA NA 0.00 0.19 0.01 NA NA NA NA NA NA 0.00 0.19 0.01 NA NA NA NA NA	3	7.44	4.19	1.94	0.75	V N	V V	0.00	00.00	0.38	0.16
1.56 0.78 0.94 0.73 NA NA 0.00 0.00 0.04 1.13 0.30 NA NA NA NA 0.00 0.00 0.13 0.25 0.20 NA	1.56 0.78 0.94 0.73 NA NA 0.00 0.00 0.44 NA 0.00 0.00 0.44 NA NA NA 0.00 0.00 0.13 0.13 0.25 0.25 NA	20	2.44	1.07	1.13	0.21	NA N	NA	0.00	00.00	69.0	0.54
1.13 0.30 NA NA NA NA 0.00 0.00 0.13 0.13 0.25 0.25 0.25 0.25 0.25 0.25 0.20 NA	1.13 0.30	00	1.56	0.78	0.94	0.73	NA	NA	00.00	00.00	0.44	0.38
0.94 0.07 NA NA NA 0.00 0.05 0.25 0.20 NA NA NA NA NA 0.00 0.69 0.01 NA NA NA NA NA 0.00 0.00 0.11 NA NA NA NA NA 0.03 0.00 0.15 NA NA NA NA NA 0.00 0.19 0.01 NA NA NA NA NA 0.00 0.19 0.01 NA NA NA NA NA 0.00 0.19 0.02 NA NA NA NA NA NA 0.00 0.19 0.02 NA NA NA NA NA NA 0.00	0.94 0.07 NA NA NA 0.00 0.25 0.25 0.20 NA NA NA NA NA NA 0.00 0.69 0.01 NA NA NA NA NA NA 0.00 0.56 0.01 NA NA NA NA NA 0.38 0.00 0.17 NA NA NA NA NA 0.00 0.25 0.00 NA NA NA NA NA NA 0.00 0.19 0.01 NA NA NA NA NA NA 0.00 0.19 0.01 NA NA NA NA	20	1.13	0.30	NA	NA	NA	NA	00.0	00.00	0.13	0.15
0.25 0.20 NA NA NA NA NA 0.00 0.69 0.01 NA NA NA NA NA 0.38 0.05 0.01 NA NA NA NA NA 0.08 0.02 0.00 NA NA NA NA NA 0.00 0.09 0.01 NA NA NA NA NA 0.00 0.19 0.01 NA NA NA NA NA 0.00 0.19 0.02 NA NA NA NA NA NA 0.19 0.02 NA NA NA NA NA NA NA 0.19 0.02 NA NA NA NA NA NA NA	0.25 0.20 NA NA NA NA NA 0.00 0.69 0.01 NA NA NA NA NA 0.38 0.56 0.11 NA NA NA NA NA 0.38 0.00 0.17 NA NA NA NA NA 0.00 0.05 0.00 NA NA NA NA NA 0.00 0.09 0.01 NA NA NA NA NA 0.00 0.19 0.01 NA NA NA NA NA 0.00	00	0.94	0.07	NA	NA	NA	VN	00.00	00.0	0.25	0.16
0.69 0.01 NA NA NA NA NA NA 0.38 0.56 0.11 NA NA NA NA NA 0.38 0.00 0.01 NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA 0.00 0.19 0.01 NA NA NA NA 0.00 0.19 0.02 NA NA NA NA NA 0.00 0.19 0.02 NA NA NA NA NA NA 0.19 0.02 NA NA NA NA NA NA	0.69 0.01 NA 0.38 0.56 0.11 NA NA NA NA NA NA 0.00 0.00 0.17 NA NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA NA 0.00 0.19 0.01 NA NA NA NA NA 0.00	20	0.25	0.20	NA	NA	NA	NA	NA	NA	00.00	00.00
0.56 0.11 NA 0.38 0.00 0.17 NA NA NA NA NA NA NA 0.00 0.00 0.17 NA NA NA NA NA NA 0.00 0.00 0.16 NA NA NA NA NA NA 0.00 0.19 0.01 NA	0.56 0.11 NA 0.38 0.00 0.017 NA NA NA NA NA NA NA 0.00 0.025 0.00 NA NA NA NA NA NA 0.00 0.019 0.016 NA NA NA NA NA NA 0.00 0.19 0.01 NA NA NA NA 0.00	00	0.69	0.01	NA	VN	VN	NA	NA	NA	0.38	0.09
0.00 0.17 NA NA NA NA NA NA NA NA 0.00 0.00 0.25 0.00 NA NA NA NA NA NA NA 0.00 0.00 0.0	0.00 0.17 NA NA NA NA NA NA NA NA 0.00 0.00 0.25 0.00 NA NA NA NA NA NA NA NA 0.00 0.00	20	0.56	0.11	NA	VN	VN	NA	VV	NA	0.38	0.02
0.25 0.00 NA 0.00 0.00	0.25 0.00 NA NA NA NA NA NA 0.00 0.00 0.16 NA NA NA NA NA NA 0.00 0.19 0.01 NA NA NA NA NA 0.00 0.19 0.01 NA NA NA NA NA 0.00 0.19 0.01 NA NA NA NA NA 0.00 0.19 0.02 NA NA NA NA NA 0.00 0.31 0.02 NA NA NA NA NA 0.00	00.	00.0	0.17	NA	VN	VV	VV	NA	NA	00.00	00.0
0.00 0.16 NA	0.00 0.16 NA NA NA NA NA NA NA 0.00 0.00 0.19 0.01 NA NA NA NA NA NA NA 0.00 0.00 0.19 0.01 NA NA NA NA NA 0.00 0.00 0.19 0.01 NA NA NA NA 0.00 0.00 0.19 0.01 NA NA NA NA 0.00 0.00 0.31 0.02 NA NA NA NA 0.00 0.00 0.31 0.31 0.00 0.00 0.00 0.00	20	0.25	00.00	V	N	N	Z	NA	NA	00 0	00.00
0.19 0.01 NA NA NA NA NA NA NA 0.00 0.00 0.19 0.01 NA NA NA NA NA 0.00 0.00 0.19 0.00 NA	0.19 0.01 NA NA NA NA NA NA NA 0.00 0.00 0.19 0.01 NA NA NA NA NA NA NA 0.00 0.00 0.01 NA NA NA NA 0.00 0.00 0.01 0.01 NA NA NA NA 0.00 0.00 0.01 0.01 NA NA NA NA 0.00 0.00 0.01 0.01 NA NA NA 0.00 0.00 0.01 0.01 0.01 0.00 0.00 0.0	00	00.0	0.16	Y Z	. V	V V	Z Z	. Z	V Z	00.00	00.0
0.19 0.01 NA NA NA NA NA NA NA NA 0.00 0.00 0.31 0.02 NA	0.19 0.01 NA NA NA NA NA 0.00 0.19 0.01 NA NA NA NA NA 0.00 0.02 NA NA NA NA 0.00	20	0.19	0.01	Z	2	Z	V Z	Z	V Z	00.00	00.00
0.19 0.01 NA	0.19 0.01 NA	00	0.19	0.01	××	. ×	. 2	. v	. ×	V Z	00.0	00 0
0.31 0.02 NA	0.31 0.02 NA NA NA NA NA 0.00	20	01 0		V N	Y N		C 18	N V	V V	00.0	00.0
	anility for each of the law and law of the law	200	2.0	. <	V 4 12	< N	< < Z	V N	X X	X	00.00	00.0

Bullscyc application rate 1.2 gal/acre. NA = not applicable; wc = wet card

Table 12--Drift deposit ratios from acrial and ground tank mixes comparing deposition within the orchard to drift sites outside the orchard - Claxton Spray Trials, 1991

10.33 0.98 0.42 0.00 0.18 0.00 0.023 0.03 0.022 0.00 0.023 0.023 0.022 0.001 0.00 0.001 0.00 0.00 0.00 0	0.33 0.98 0.42 0.00 0.18 0.00 0.00 0.23 0.18 0.00 0.01 0.00 0.21 0.18 0.00 0.01 0.00 0.01 0.00 0.01 0.00 0.01 0.00 0.01 0.00 0.01 0.00 0.01 0.00 0.01 0.00 0		-	R B ²	R [‡] B ²	B*	R T	oritt iine23 R B B	Dr fft R	Dr{ft line ₂ 4 R B	Dr ft	Drift Hne20
0.33 0.98 0.42 0.00 0.18 0.00 0.021 0.158 0.54 0.011 0.00 0.001 0.00 0.001 0.022 0.08 0.001 0.00 0.000 0.00 0.00 0.00 0.002 0.018 0.001 0.00 0.00 0.00 0.00 0.00 0.0002 0.018 0.000 0.00 0.00 0.00 0.00 0.00 0.0002 0.018 0.000 0.00 0.00 0.00 0.00 0.00 0.0002 0.010 0.00 0.00 0.00 0.00 0.00 0.	0.33 0.98 0.42 0.00 0.18 0.00 0.00 0.00 0.00 0.01 0.00 0.01 0.00 0.01 0.00 0.01 0.00 0.01 0.00 0.01 0.00 0.01 0.00 0.01 0.00 0.01 0.00 0.01 0.00 0.01 0.00 0.01 0.00 0.00 0.01 0.00 0	9y 1	l	1 1		1		posit rati	1	1 1	1	1
0.58 0.54 0.001 0.00 0.001 0.00 0.001 0.00 0.001 0.00 0.001 0.00 0.001 0.00 0.001 0.00 0.0	0.58 0.54 0.01 0.00 0.001 0.00 0.00 0.00 0.00 0.	50	0.33	0.98	0.42	00.00	0.18	0.00	00.0	6.23	AN	Z
0.11 0.20 0.001 0.00 0.00 0.00 0.00 0.00	0.11 0.20 0.001 0.00 0.00 0.00 0.00 0.00	100	0.58	0.54	0.01	0.00	0.001	00.00	00.00	0.21	Z	NA
0.02 0.08 0.00 0.00 0.00 0.00 0.00 0.00	0.022 0.08 0.001 0.00 0.00 0.00 0.00 0.00 0.0	150	0.11	0.20	0.001	0.00	0.00	00.00	00.0	0.00	٧Z	NA
0.03 0.18 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.03 0.18 0.00 0.00 0.00 0.00 0.00 0.00 0.00	200	0.02	0.08	0.001	0.00	00.00	00.00	00.00	00.0	V Z	VN
0.0002 0.001 0.00 0.00 NA NA NA 0.00 0.00 0.00 NA NA NA 0.00 0.00	0.0002 0.001 0.00 0.00 NA NA NA 0.00 0.00 0.00 NA NA NA 0.00 0.00	250	0.03	0.18	00.00	00.00	00.00	0.00	00.00	00.00	×2	Z
NA	NA	300	0.000	0	00.0	00.00	Y.	N.A.	00.00	00.00	V.	V
NA	NA N	350	NA)	00.00	00.00	Y.	N N	00.00	0.00	N N	NA N
NA	NA	000	AN	A Z	00.0	000	Y Z	. V	00.0	00.0	Z	. 2
NA	NA	150	Y.	Y.	NA NA	N N	Š	. V	00.00	00.00	X X	Y Y
4.25 0.95 0.96 0.03 0.18 0.25 wc wc 0.03 0.04 0.06 0.00 0.73 0.03 0.04 0.06 0.00 0.73 0.03 0.04 0.06 0.00 0.19 0.03 0.04 0.06 0.00 0.19 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.0	4.25 0.95 0.96 0.03 0.18 0.25 wc wc o.03 0.18 0.25 0.95 0.09 0.03 0.004 0.006 0.00 0.73 0.003 0.003 0.004 0.006 0.00 0.13 0.02 0.01 0.005 0.00 0.121 wc wc wc 0.003 0.003 0.003 0.00 0.00 0.00 0.00	200	NA	NA	NA	NA	NA	NA	00.00	00.00	NA	< z
4.25 0.95 0.96 0.03 0.18 0.25 wc wc 0.32 1.26 0.33 0.003 0.04 0.06 0.06 0.073 0.03 0.04 0.06 0.00 0.19 0.03 0.18 0.25 0.33 0.002 0.01 0.02 0.00 0.00 0.19 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.0	1.10 1.38 0.17 0.00 0.00 0.00 0.00 0.00 0.00 0.00	3y 2										
0.32 1.26 0.33 0.003 0.04 0.06 0.00 0.73 WC WC OLS 0.013 0.02 0.01 0.02 0.00 0.19 WC WC OLS 0.003 0.003 0.00 0.00 0.00 0.00 NA NA 0.0002 0.0005 NA NA 0.00 0.00 0.00 NA NA NA NA NA 0.00 0.00 0.00 0.00 NA NA NA NA NA 0.00 0.00 0.00 0.00 1.10 1.38 0.17 0.41 0.34 0.92 0.00 0.00 0.01 0.51 0.00 0.01 0.02 0.001 0.00 0.00 0.01 0.51 0.00 0.01 0.02 0.001 0.00 0.00 0.00 0.01 0.02 0.00 0.01 0.00 0.00 0.00	0.32 1.26 0.33 0.003 0.04 0.06 0.00 0.73 0.03 0.18 0.13 0.002 0.001 0.002 0.002 0.002 0.002 0.002 0.003 0.19 0.003 0.001 0.002 0.002 0.000 0.19 0.003 0.003 0.003 0.000 0.000 0.003 0.003 0.000 0.000 0.003 0.000 0.001 0.001 0.001 0.001 0.001 0.000 0.000 0.000 0.000 0.001 0.001 0.001 0.001 0.000	50	4.25	0.95	96.0	0.03	0.18	0.25	3	3	NA NA	N
0.03 0.18 0.13 0.02 0.01 0.02 0.00 0.19 WC WC WC 0.02 0.01 0.0002 0.02 0.00 0.00 0.10 WA NA NA NA NA NA NA NA 0.00 0.00 0.00 NA NA NA NA NA NA NA 0.00 0.00 0.00 0.00	0.03 0.18 0.13 0.02 0.01 0.02 0.00 0.19 wc wc 0.02 0.01 0.000 0.00 0.00 0.00 NA NA 0.0002 0.0003 NA NA 0.00 0.00 NA NA 0.0002 0.0002 NA NA 0.00 0.00 NA NA NA NA NA NA NA 0.00 0.00 0.01 1.10 1.38 0.17 0.41 0.34 0.92 0.004 1.80 0.02 0.03 0.00 0.01 0.00 0.01 0.04 0.19 0.00 0.01 0.00 0.01 0.00 0.03 0.00 0.01 0.00 0.01 0.00 0.03 0.00 0.01 0.00 0.00 0.00 0.01 0.00 0.02 NA	00	0.32	1.26	0.33	0.003	0.04	90.0	00.0	0.73	NA V	VZ
WE WE WE O.02 0.01 0.0002 0.02 0.02 0.00 1.21 0.000 0.00 0.	WE WE WE O.02 0.01 0.0002 0.02 0.00 1.21 WE WE O.05 0.003 0.003 NA NA NA 0.00 0.00 0.00 0.00 0.00 0.00	150	0.03	0.18	0.13	0.02	0.01		00.00	0.19	Y Z	×
WC WC WC OOO 000 000 000 000 000 000 000 000 00	W.C. W.C. 0.05 0.003 0.00 0.00 0.00 0.00 0.00 0.	000	3	3	0.02	0.01	0.0002	0.02	00.00	1.21	NA	X
NA NA NA 0.003 0.003 NA NA 0.00 0.03 NA NA 0.00 0.03 NA NA NA 0.000 0.00 0.00 0.00 0.00 0.00	NA NA NA 0.003 0.003 NA NA 0.00 0.03 NA NA 0.0002 0.0002 NA NA 0.00 0.00 NA NA NA 0.0005 0.0005 NA NA 0.00 0.00 NA NA NA NA NA 0.00 0.00 0.01 1.11 0.01 0.02 0.07 0.13 0.03 0.00 0.01 0.02 0.07 0.01 0.00 0.00 0.00 0.01 0.02 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.0	550	3	3	0.05	0 003	00.0	0.00	00.00	0.02	Y Z	X
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NA N	NA N	150	Z	NA.	0.0002		NA	N Z	00.00	00.00	Y Z	Z
NA	NA	00	NA	V.	0.0004		¥ Z	N'A	00.00	00.00	Y Z	Z
1.10 1.38 0.17 0.41 0.34 0.92 0.004 1.80 0.00 0.00 0.01 1.11 0.01 0.02 0.07 0.13 0.03 0.002 0.49 0.01 1.11 0.04 0.00 0.01 0.00 0.00 0.01 0.00 0.00	1.10 1.38 0.17 0.41 0.34 0.92 0.004 1.80 0.00 0.00 0.01 1.11 0.01 0.02 0.07 0.13 0.03 0.002 0.49 0.001 1.11 0.01 0.02 0.001 0.001 0.001 0.000 0.00 0.	20	NA	NA	NA		VA	NA	00.00	00.00	Ϋ́Z	NA
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0.004 0.19 0.00 0.01 0.00 0.00 0.00 0.00 0.00	0.004 0.19 0.00 0.01 0.00 0.00 0.00 0.00 0.00	500	0.01		0.001	0.02	0.0001		00.0		00.0	
0.00 0.05 0.00 0.02 NA NA NA 0.00 0.00 0.00 0.00 0.01 0.00 0.01 NA NA 0.00 0.00 0.00 0.00 0.01 NA NA NA 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.05 0.00 0.02 NA NA 0.00 0.00 0.00 0.00 0.00 0.00 0.0	250	0.004		00.0	0.01	0.001		00.0		00.0	
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0.00 0.01 0.00 0.02 NA NA NA 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.01 0.00 0.02 NA NA NA 0.00 0.00 0.00 0.00 0.00 0.00	350	00.0	0.03	00.0	0.01	NA NA	NA	00.00	00.0	00.0	0.03
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AN AN AN AN AN AN ANDOO CO CO	0.00 0.0004 NA	00	00.0	0.0004	NA	٧٧	NA	NA	VV	NA	00.0	0.00
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| shodamine dye from ground-sprayer. Equivalent Rate = 1.2 gal/acre. = Bullseye dye from aircraft. Rate = 1.2 gal/acre. NA = not applicable; wc = wet card

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Table 13--Average aircraft spray deposition on upper quandrant samples, Claxton Spray Project, 1991

Tri	al		Tree	Number of	Dro	os/cm ²	Fluid ou	nces/acre
da	Y		line	samples	Top		Top	Bottom
Aug.	20,	1991	1	8	2.96	0.02	24.83	0.06
	•		2	8	3.28	0.00	25.34	0.00
			3	8	3.35	0.09	11.81	0.14
			4	8	11.12	0.29	107.87	0.33
	•		5	8	2.85	0.05	33.25	0.20
			6	8	2.69	0.16	15.49	0.64
Aug.	21,	1991	1	8	7.46	0.02	13.50	0.02
•			2	8	5.02	0.01	14.72	0.00
			3	8	1.69	0.03	3.72	0.01
			4	8	6.39	0.00	19.38	0.00
			5	8	1.54	0.01	1.69	0.00
			6	8	2.20	0.00	2.84	0.00
Aug.	22,	1991	1	8	4.33	0.02	11.87	0.01
	•		2	8	6.76	0.00	26.26	0.00
			3	8	7.93	0.00	9.48	0.00
			4	8	6.01	0.02	11.28	0.01
			5 '	8	6.06	0.01	9.08	0.00
			6	8	8.92	0.00	34.11	0.00

Aircraft application rate was 1.2 gal/acre.

Table 14--Average ground sprayer deposition on upper quandrant sampler cards at 40 ft - Claxton Spray Project, 1991

Tr	ial		Tree	Number of	Dro	os/cm ²	Fluid o	unces/acre
d	ay		line	samples	Top	Bottom	Top	Bottom
Aug.	20,	1991	1	8	0.74	0.56	1.73	3.63
			2	8	1.24	0.72	6.09	19.30
			3	8	1.27	1.20	4.42	8.23
			4	8	1.51	1.57	7.56	13.40
			5	8	0.95	0.96	7.08	5.83
			6	8	1.53	2.25	6.14	8.21
Aug.	21,	1991	1	8	1.32	1.02	2.56	1.82
	,		2	8	1.03	0.96	2.80	8.98
			3	8	1.03	0.99	2.64	4.72
			4	8	2.04	1.91	6.00	10.31
			5	8	0.70	0.75	1.58	1.20
			6	8	2.07	1.54	4.23	3.42
Aug.	22,	1991	1	8	1.31	1.26	3.25	4.31
			2	8	1.27	0.93	5.68	3.89
			3	8	3.32	2.27	8.16	7.38
			4	8	2.38	1.16	10.31	9.72
			5 '	8	1.92	1.23	3.93	3.19
			6	8	2.14	1.03	6.52	3.95

Ground application rate on August 20-21 was 2.88 gal/acre and 5.76 gal/acre on August 22, 1991.

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Table 15--Average aircraft spray deposition on lower quandrant samples, Claxton Spray Project, 1991

Tr	ial		Tree	Number	of samples	Dro	ps/cm ²	Fluid c	unces/acre
d	ay		line	Top	Bottom	Top	Bottom	Тор	Bottom
Aug.	20,	1991	1	8	8	1.93	0.02	27.18	0.001
•	•		2	8	7	2.85	0.00	35.79	0.00
			3	8	8	3.40	0.04	19.23	0.07
			4	8	7	6.66	0.02	38.50	0.01
			5	8	8	1.97	0.00	19.98	0.00
			6	8	8	1.09	0.01	6.61	0.00
Aug.	21,	1991	1	8	8	5.74	0.00	11.97	0.00
_	,		2	8	8	4.73	0.00	7.27	0.00
			3	8	8	0.88	0.00	0.68	0.31
			4	8	8	4.52	0.00	10.44	0.00
			5	8	8	1.90	0.01	1.80	0.00
			6	8	8	3.04	0.43	15.20	0.19
Aug.	22,	1991	1	8	7	3.63	0.00	16.06	0.00
	,		2	8	8	5.30	0.00	14.27	0.00
			3	8	8	6.98	0.00	11.68	0.00
			4	8	8	4.36	0.00	8.30	0.00
			5	7	8	5.71	0.00	8.94	0.00
			6	8	8	4.68	0.00	15.52	0.00

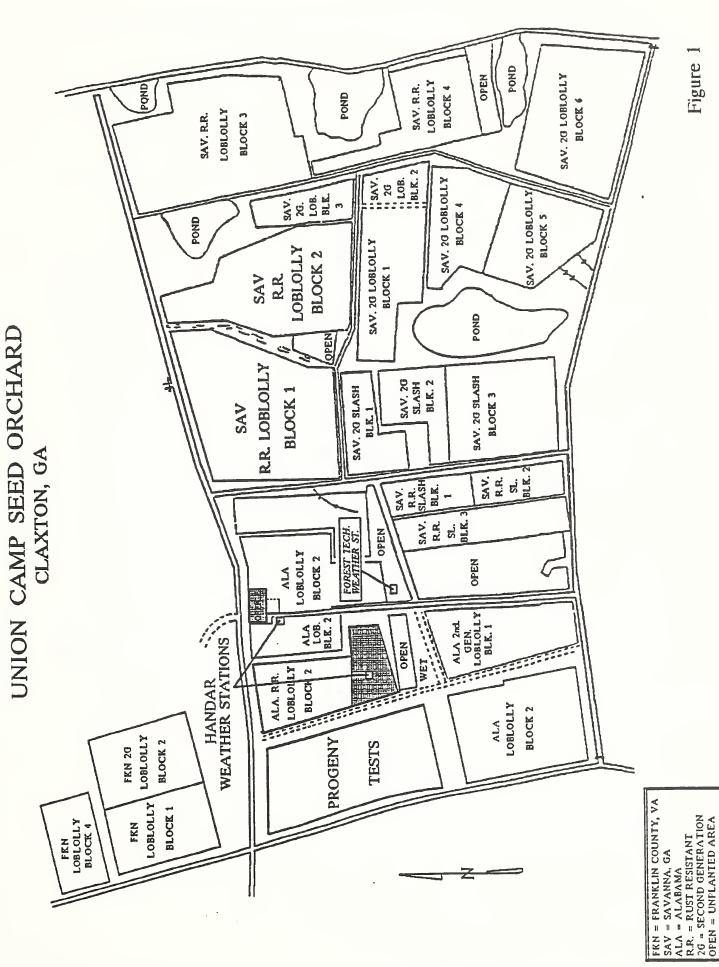
Aircraft application rate was 1.2 gal/acre.

Table 16--Average ground sprayer deposition on lower quandrant sampler cards at 25 ft - Claxton Spray Project, 1991

Trial		Tree	Number	of samples	Drop	s/cm ²	Fluid o	unces/acre
day		line	Top	Bottom	Top		Top	Bottom
Aug. 20, 19	991	1	8	8	4.68	11.36	24.06	124.77
,		2	8	7	2.38	9.38	14.99	80.89
		3	8	8	4.92	13.92	32.84	98.34
		4	8	7	5.89	4.63	20.74	18.23
		5	8	8	5.03	4.43	39.22	64.12
		6	8	8	3.86	3.77	12.56	28.42
Aug. 21, 19	991	1	8	8	6.17	12.44	18.49	123.48
•		2	8	8	3.07	4.34	10.59	29.86
		3	8	8	4.47	9.78	30.31	103.45
		4	8	8	6.98	21.04	52.00	. 76.74
		5	8	8	3.30	6.87	9.27	58.90
		6	8	8	5.01	5.14	23.79	69.73
Aug. 22, 19	991	1	8	7	4.63	13.92	14.32	24.51
_		2	8	8	4.57	6.16	14.69	37.64
		3	8	8	5.13	9.25	19.46	5.73
		4	. 8	8	8.12	15.26	31.01	16.86
		5	7	8	4.58	6.87	11.30	13.26
		6	8	8	3.96	6.35	12.10	11.71

Ground application rate on August 20-21 was 2.88 gal/acre and 5.76 gal/acre on August 22, 1991.

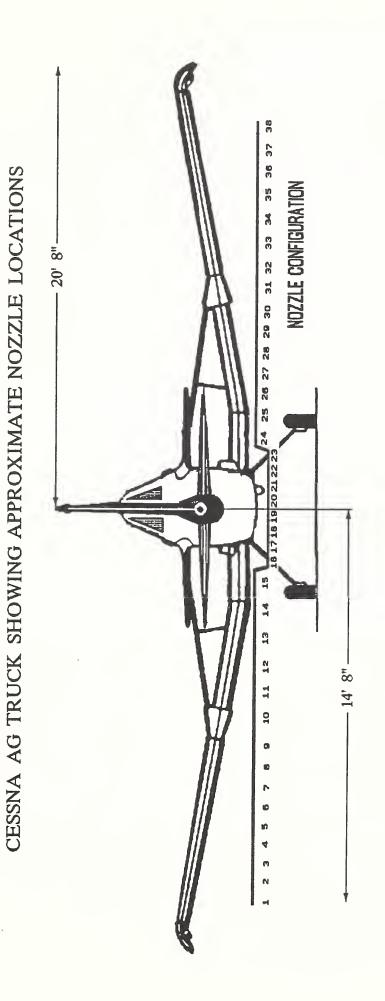
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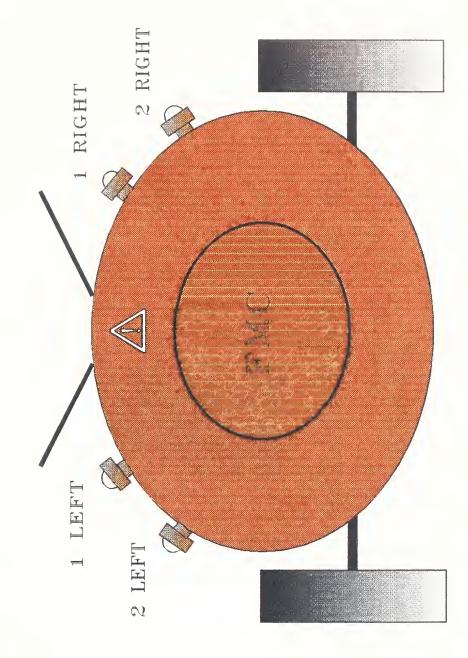
DRIFT LINE/TREE LINE POSITIONS 0 FOREST TECH HANDAR HANDAR 55 ft 6 ft 22 ft 270 -- 90 Ν DIR SPEED DIR SPEED DIR SPEED 270 5.3 244 3.8 238 3.1 AIRCRAFT - Day 1 180 315 281 0.4 3.3 277 0 Day 2 273 1.9 270 0 344 5.5 Day 3 225 5.2 271 5.4 GROUND - Day 1 253 3.7 1.4 270 1.6 246 279 0.5 Day 2 242 Day 3 283 0.9 1.8 315 1.8 WEATHER STATION DRIFT LINE 0 2 3 5 DRIFT LINE 4 WEATHER STATION DRIFT LINE 1 4 6 DRIFT LINE 2 **DRIFT LINE 3** WEATHER STATION

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SETUP FOR CLAXTON SPRAY TRIALS FMC 757 CP SPEED SPRAYER AUGUST 20-22, 1991



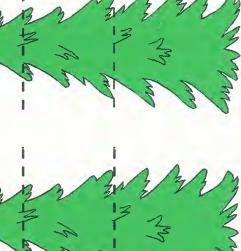
AUGUST 20 & 21 - NOZZLES 1 LEFT & 1 RIGHT WERE USED AUGUST 22 - NOZZLES 1 LEFT, 2 LEFT, 1 RIGHT, 2 RIGHT WERE USED



SPRAY DEPOSITION SAMPLER PLACEMENT CLAXTON SPRAY TRIALS, AUGUST 1991

CARDS TOP AND BOTTOM 4 QUADRANT CANS UPPER

CARDS TOP AND BOTTOM 4 QUADRANT CANS LOWER

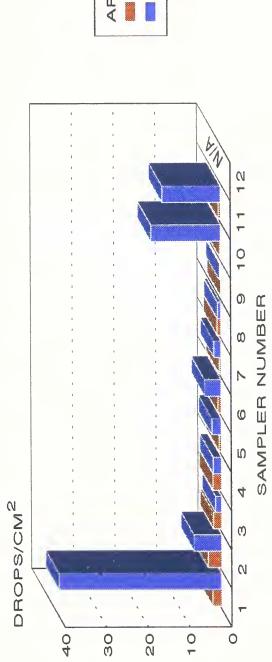


TREE SPACING = 22 ft CARD SPACING = 5 ft

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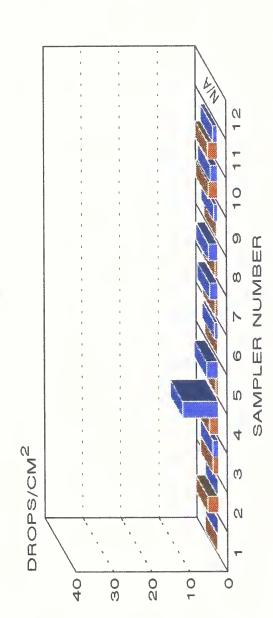
CLAXTON SPRAY TRIALS





APPLICATOR TYPE Ground Aircraft

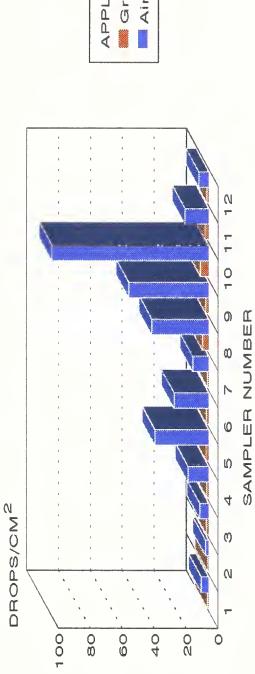
TREE LINE 1 - BOTTOM



APPLICATOR TYPE
Ground
Aircraft

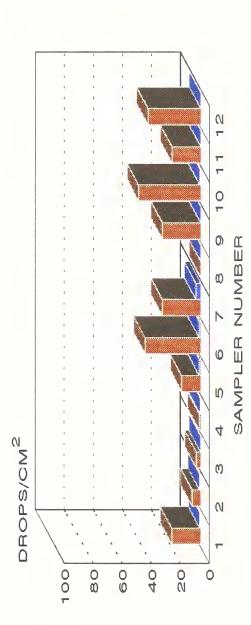
CLAXTON SPRAY TRIALS

DAY 1 TREE LINE 2 - TOP



APPLICATOR TYPE Ground Aircraft

TREE LINE 2 - BOTTOM



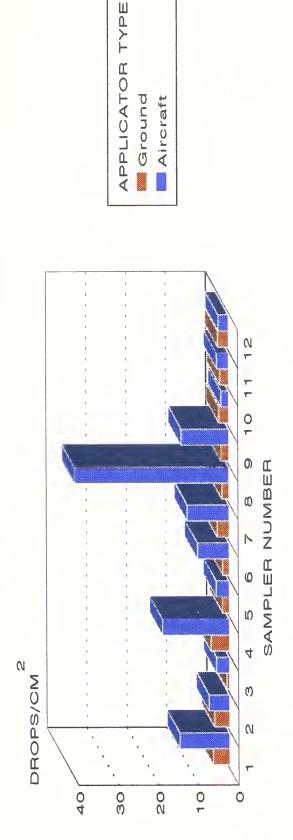


AUGUST 20, 1991 GROUND SPRAYER RATE = 2.9 gal/acre AIRCRAFT RATE = 1.2 gal/acre

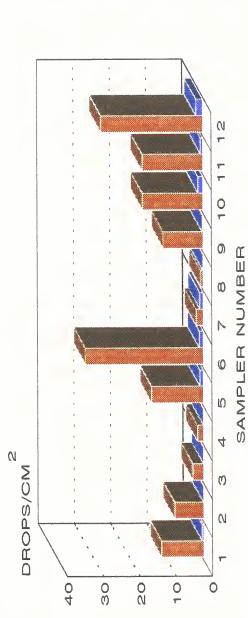
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SPRAY TRIALS CLAXTON





TREE LINE 3 - BOTTOM



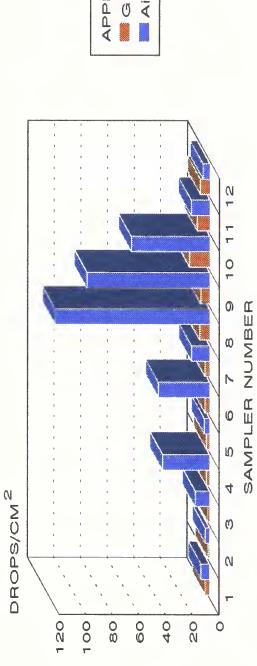
APPLICATOR TYPE

Ground
Aircraft

AUGUST 20, 1991 GROUND SPRAYER RATE = 2.9 gal/acre AIRCRAFT RATE = 1.2 gal/acre

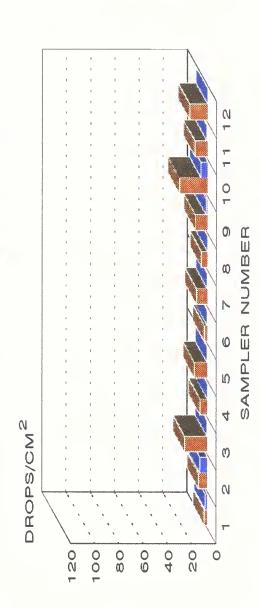
CLAXTON SPRAY TRIALS

DAY 1 TREE LINE 4 - TOP



APPLICATOR TYPE Ground Aircraft

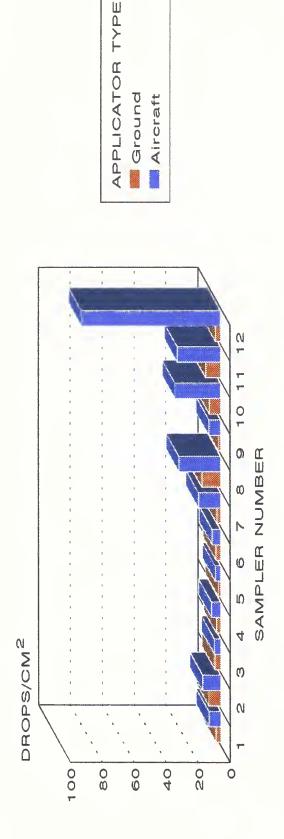
TREE LINE 4 - BOTTOM



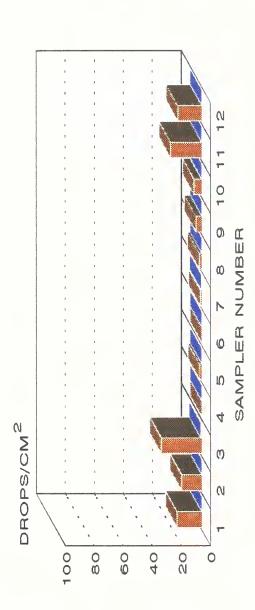
APPLICATOR TYPE
Ground
Aircraft

AUGUST 20, 1991 GROUND SPRAYER RATE = 2.9 gal/acre AIRCRAFT RATE = 1.2 gal/acre

DAY1 TREE LINE 5 - TOP



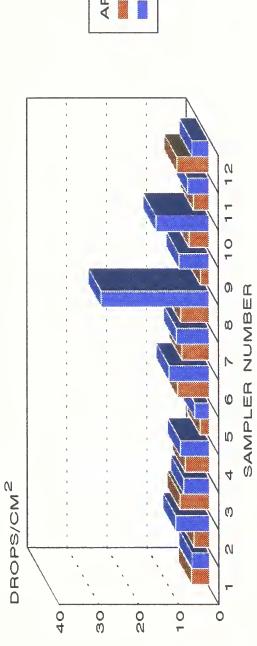
TREE LINE 5 - BOTTOM



APPLICATOR TYPE

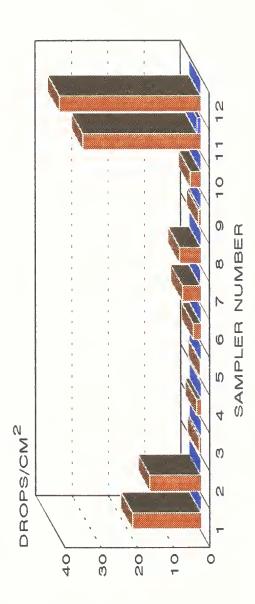
Ground
Aircraft

TREE LINE 6 - TOP



APPLICATOR TYPE
Ground
Aircraft

TREE LINE 6 - BOTTOM

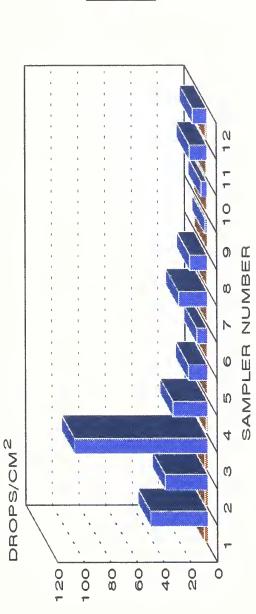


APPLICATOR TYPE

Ground
Aircraft

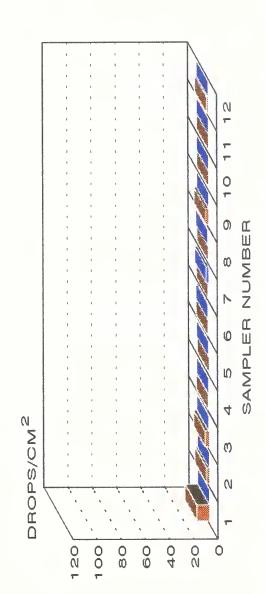








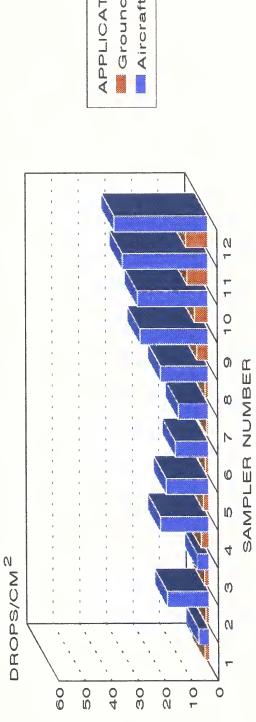
TREE LINE 1 - BOTTOM



APPLICATOR TYPE

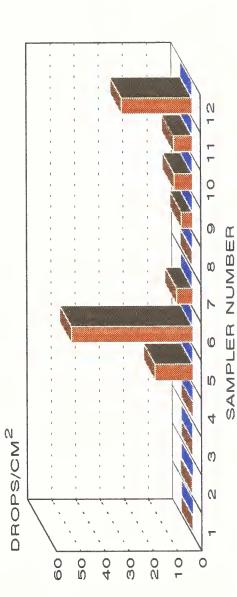
Ground
Aircraft

LINE 2 - TOP DAY 2 TREE



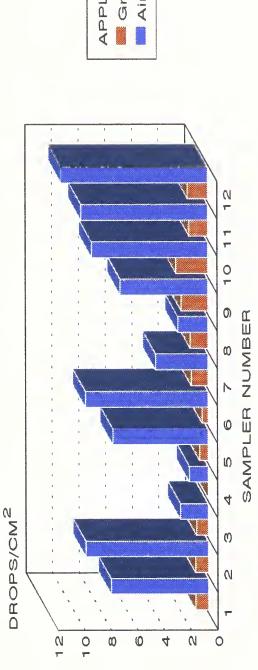
APPLICATOR TYPE Ground Aircraft

TREE LINE 2 - BOTTOM



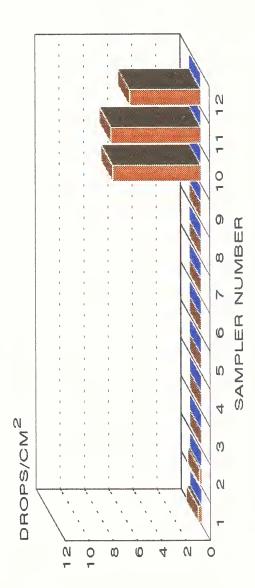


DAY 2 TREE LINE 3 - TOP





TREE LINE 3 - BOTTOM

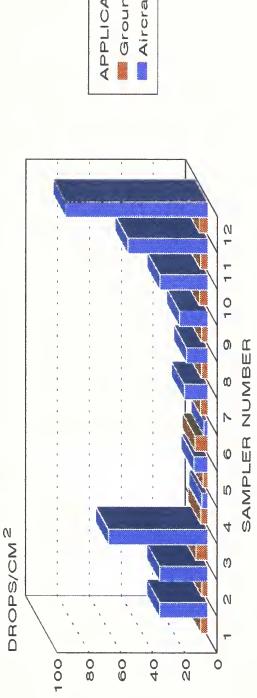


APPLICATOR TYPE

Ground

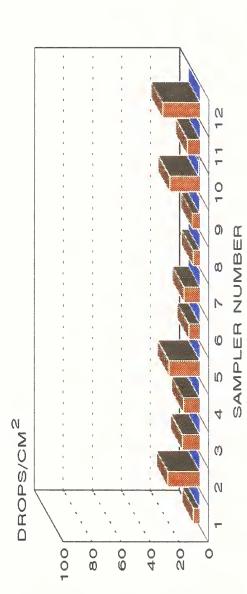
Aircraft

TREE LINE 4 - TOP



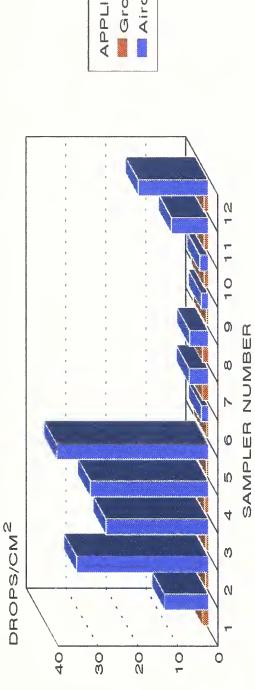


TREE LINE 4 - BOTTOM





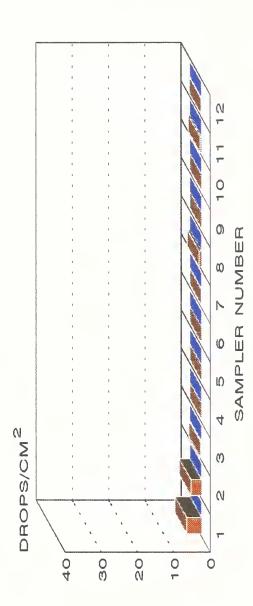
DAY 2 TREE LINE 5 - TOP



APPLICATOR TYPE

Ground
Aircraft

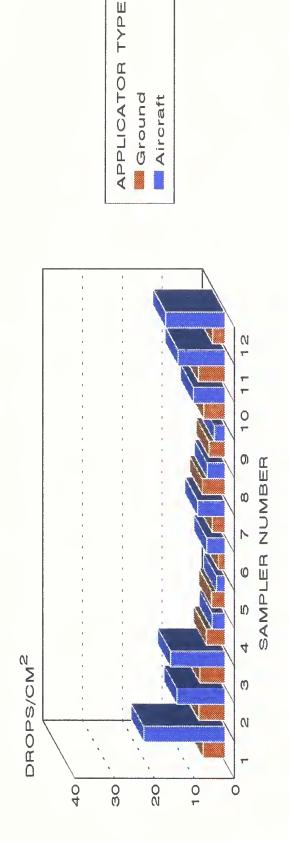
TREE LINE 5 - BOTTOM



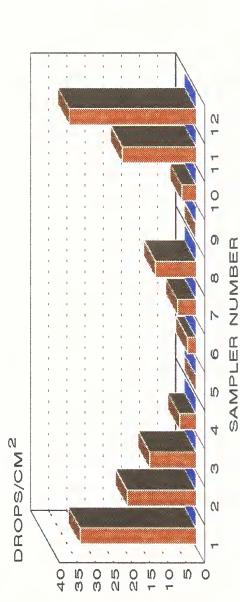
APPLICATOR TYPE

Ground
Aircraft





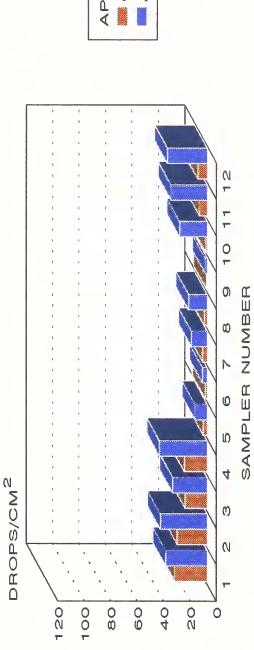
TREE LINE 6 - BOTTOM



APPLICATOR TYPE Ground Aircraft

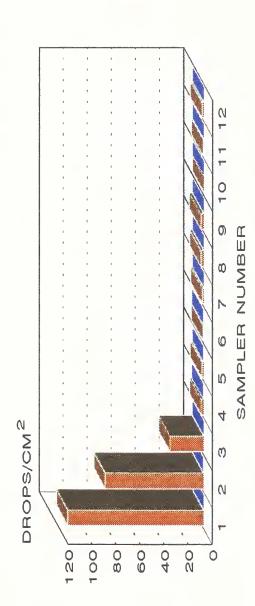


DAY 3 TREE LINE 1 - TOP



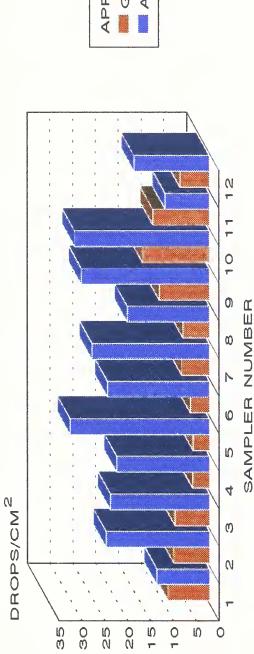
APPLICATOR TYPE Ground Aircraft

TREE LINE 1 - BOTTOM



APPLICATOR TYPE Ground Aircraft

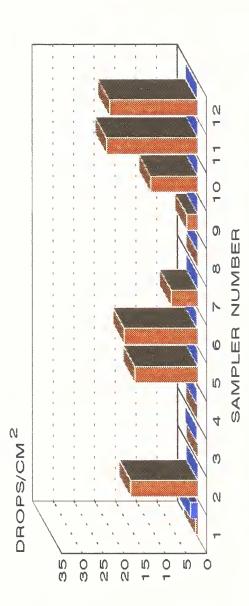
DAY 3 TREE LINE 2 - TOP



APPLICATOR TYPE

Ground
Aircraft

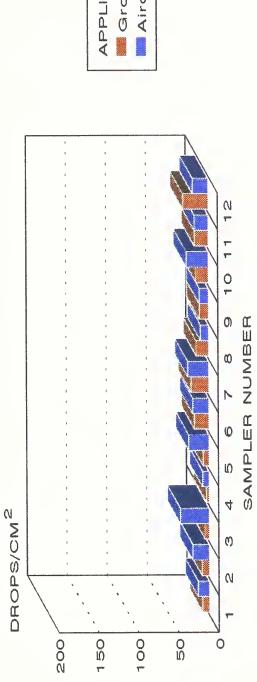
TREE LINE 2 - BOTTOM



APPLICATOR TYPE
Ground
Aircraft

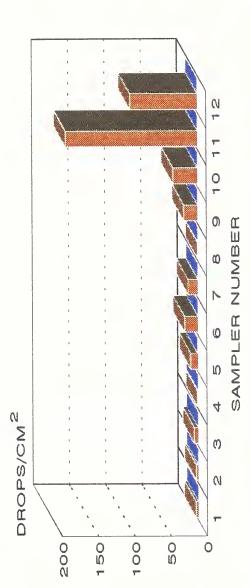






APPLICATOR TYPE Ground Aircraft

TREE LINE 3 - BOTTOM

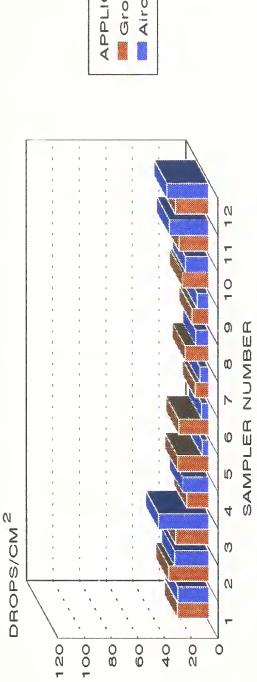






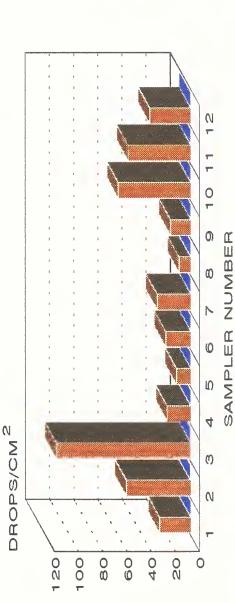
LINE 4 - TOP







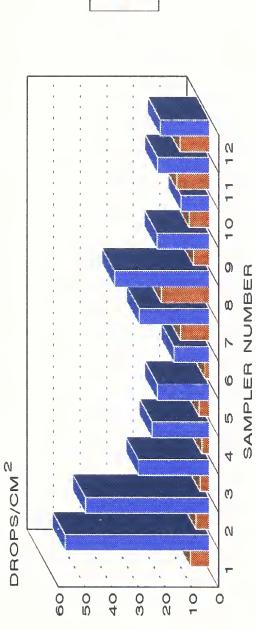
TREE LINE 4 - BOTTOM



APPLICATOR TYPE Ground Aircraft

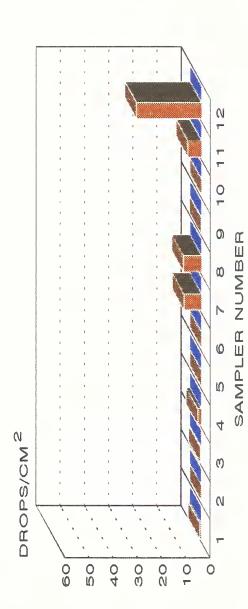


DAY 3 TREE LINE 5 - TOP



APPLICATOR TYPE
Ground
Aircraft

TREE LINE 5 - BOTTOM



APPLICATOR TYPE
Ground
Aircraft

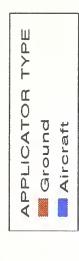




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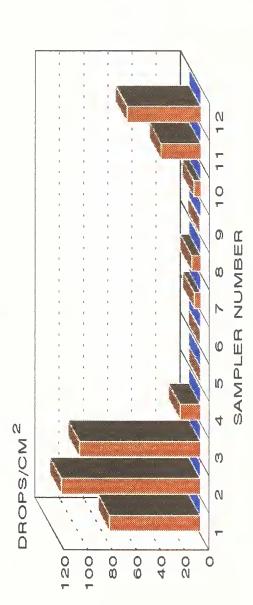
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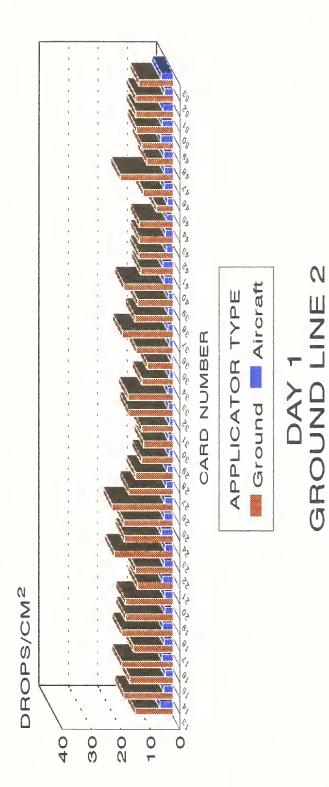
APPLICATOR TYPE

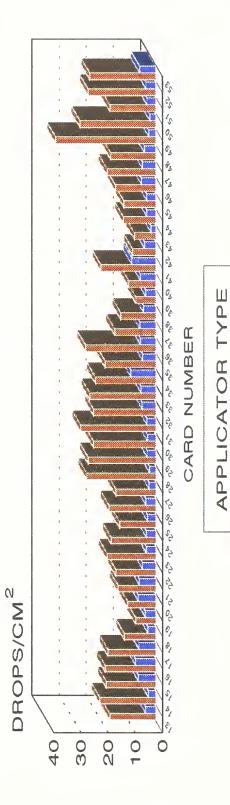
Ground

Aircraft



DAY 1 GROUND LINE 1





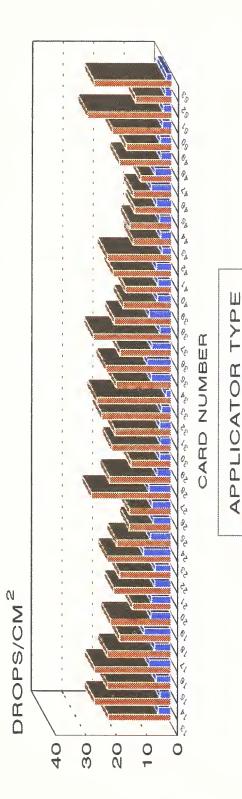
AUGUST 20, 1991 GROUND SPRAYER RATE = 2.9 gal/acre AIRCRAFT RATE = 1.2 gal/acre

Aircraft

Ground

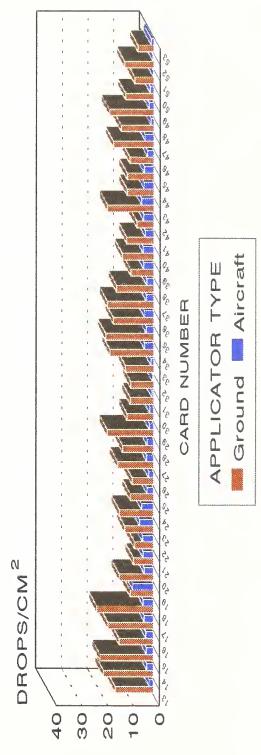


GROUND LINE 3



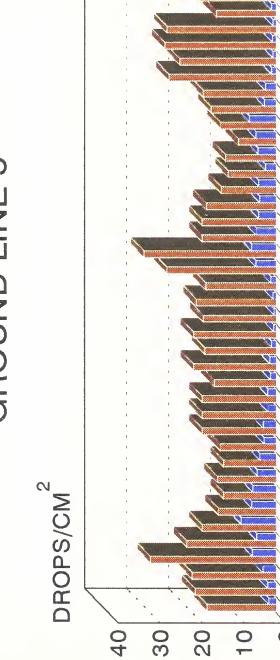
GROUND LINE 4

Ground Aircraft





DAY 1 GROUND LINE 5

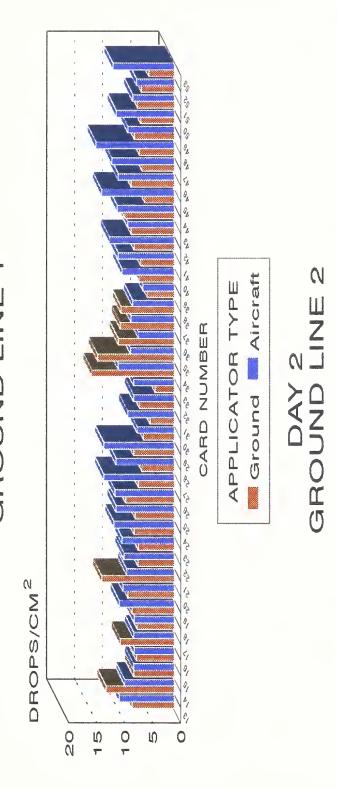


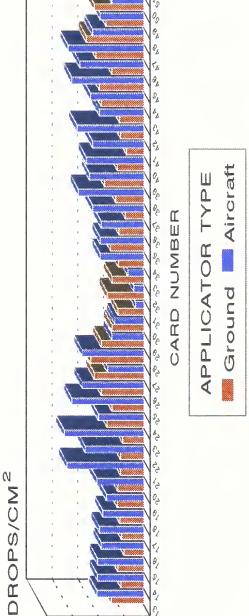
CARD NUMBER

APPLICATOR TYPE Ground Aircraft

Figure 27

CLAXTON SPRAY TRIALS DAY 2 GROUND LINE 1





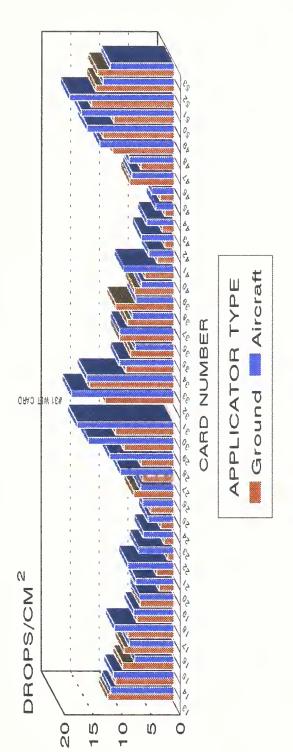
0

10

0

20

GROUND LINE 3





DROPS/CM²

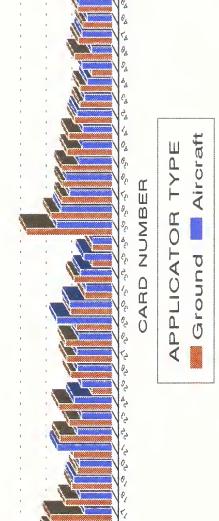
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10

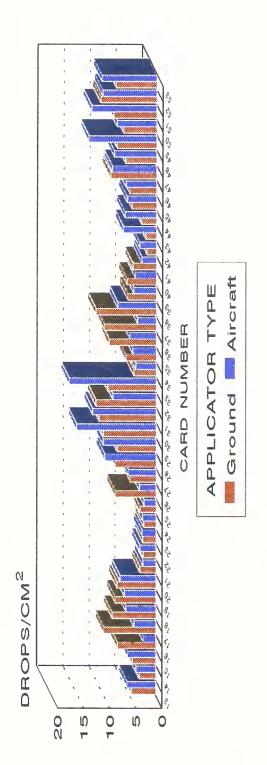
15

0

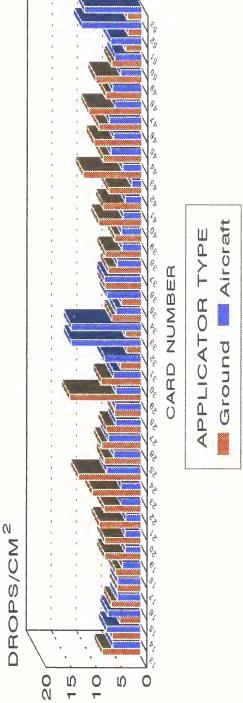
5



CLAXTON SPRAY TRIALS DAY 2 GROUND LINE 5

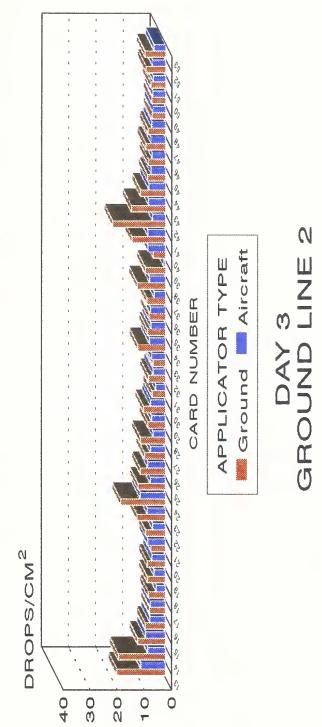


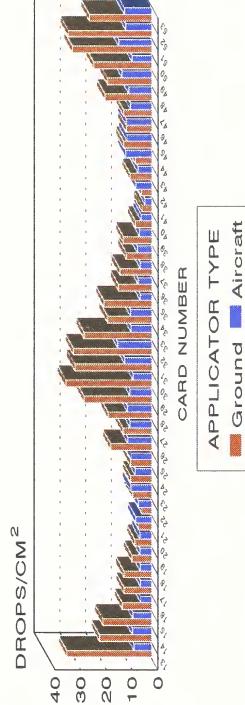
GROUND LINE 6



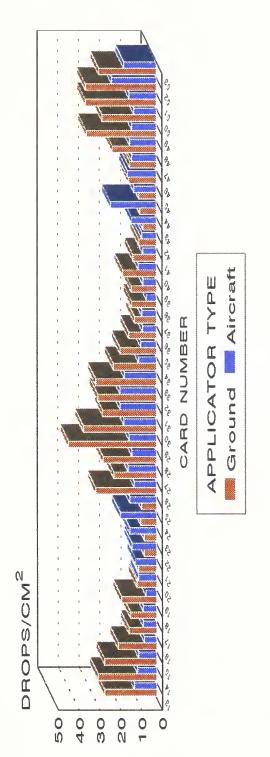
AUGUST 21, 1991 GROUND SPRAYER RATE = 2.9 gal/acre AIRCRAFT RATE = 1.2 gal/acre

CLAXTON SPRAY TRIALS GROUND LINE 1





GROUND LINE 3



DAY 3 GROUND LINE 4

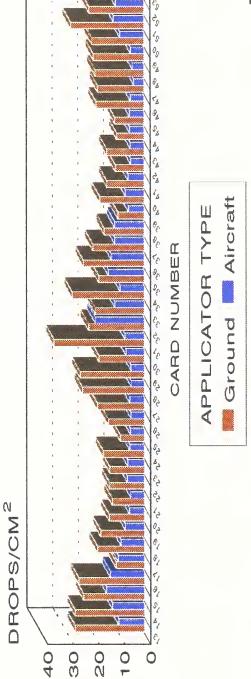
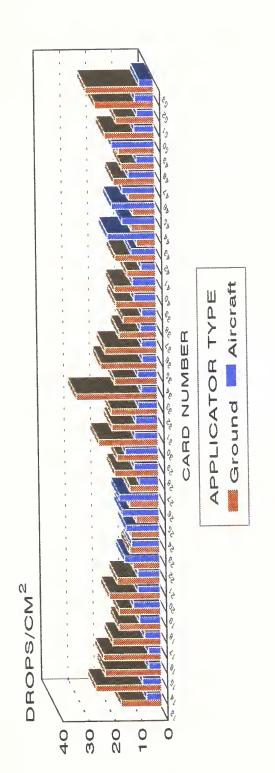


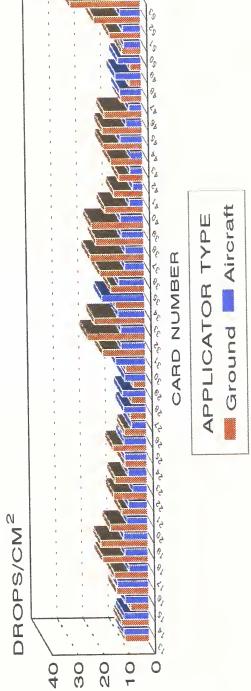
Figure 31

AUGUST 22, 1991 GROUND SPRAYER RATE = 5.8 gal/acre AIRCRAFT RATE = 1.2 gal/acre

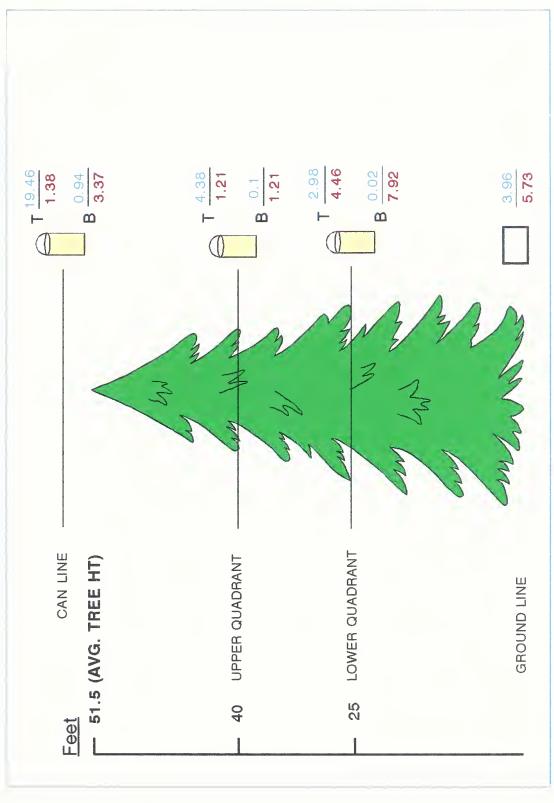
CLAXTON SPRAY TRIALS DAY 3 GROUND LINE 5



DAY 3 GROUND LINE 6



DAY 1 - AVERAGE DEPOSITION - DROPS/CM² CLAXTON SPRAY TRIALS, AUGUST 1991 SPRAY DEPOSIT PENETRATION



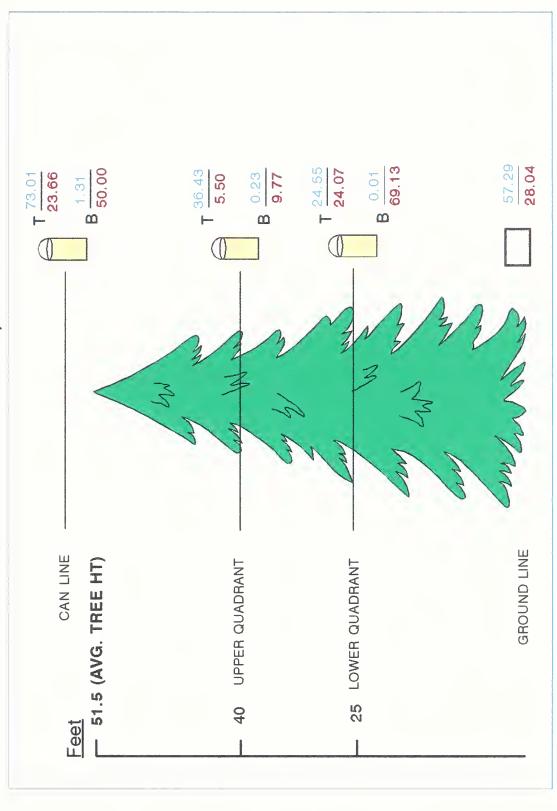
COMPOSITE DEPOSITION (AVG.) FOR CARDS IMMEDIATELY UNDER TREE, OVER TREE AND WITHIN THE CROWN FOR ALL TREES EACH DAY.

Bullseye AIRCRAFT RA Rhodamine GROUND SPF

AIRCRAFT RATE = 1.2 gal/acre



DAY 1 - AVERAGE DEPOSITION - FLUID OUNCES/ACRE CLAXTON SPRAY TRIALS, AUGUST 1991 SPRAY DEPOSIT PENETRATION



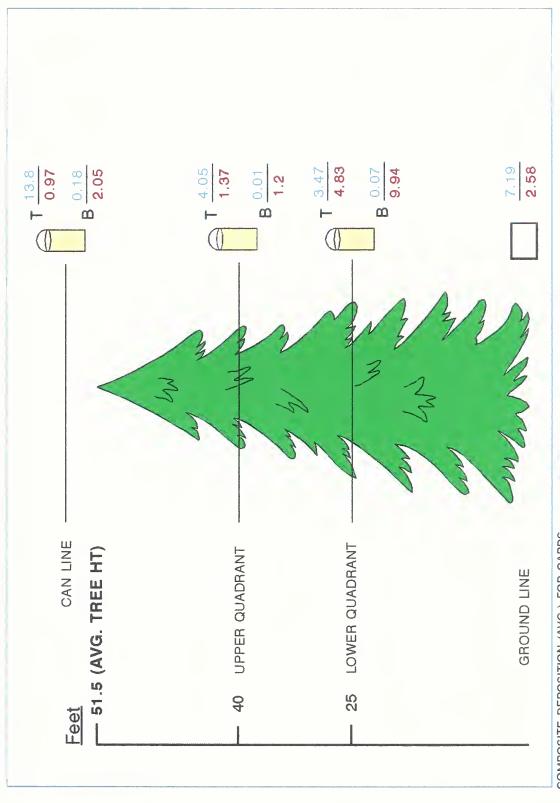
COMPOSITE DEPOSITION (AVG.) FOR CARDS IMMEDIATELY UNDER TREE, OVER TREE AND WITHIN THE CROWN FOR ALL TREES EACH DAY.

Bullseye AIRCRAFT RATE Rhodamine GROUND SPRAY

AIRCRAFT RATE = 1.2 gal/acre



DAY 2 - AVERAGE DEPOSITION - DROPS/CM² CLAXTON SPRAY TRIALS, AUGUST 1991 SPRAY DEPOSIT PENETRATION



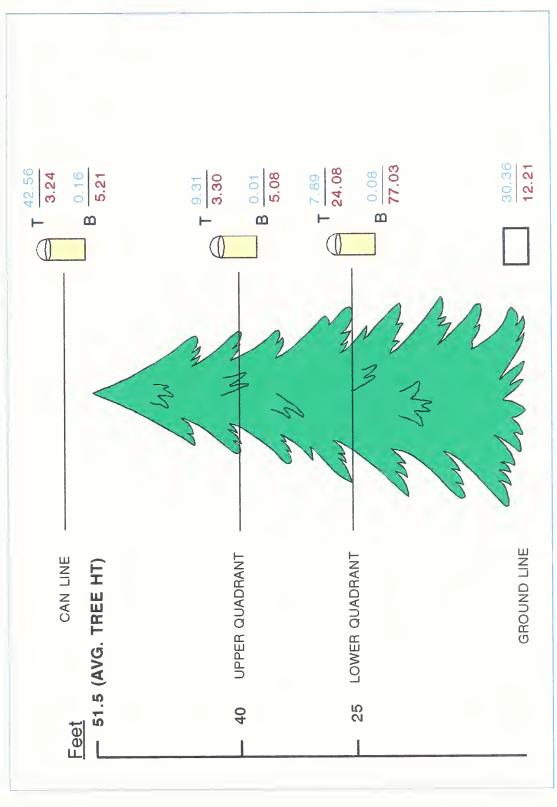
COMPOSITE DEPOSITION (AVG.) FOR CARDS IMMEDIATELY UNDER TREE, OVER TREE AND WITHIN THE CROWN FOR ALL TREES EACH DAY.

Bullseye AIRCRAFT Rhodamine GROUND S

AIRCRAFT RATE = 1.2 gal/acre



DAY 2 - AVERAGE DEPOSITION - FLUID OUNCES/ACRE CLAXTON SPRAY TRIALS, AUGUST 1991 SPRAY DEPOSIT PENETRATION



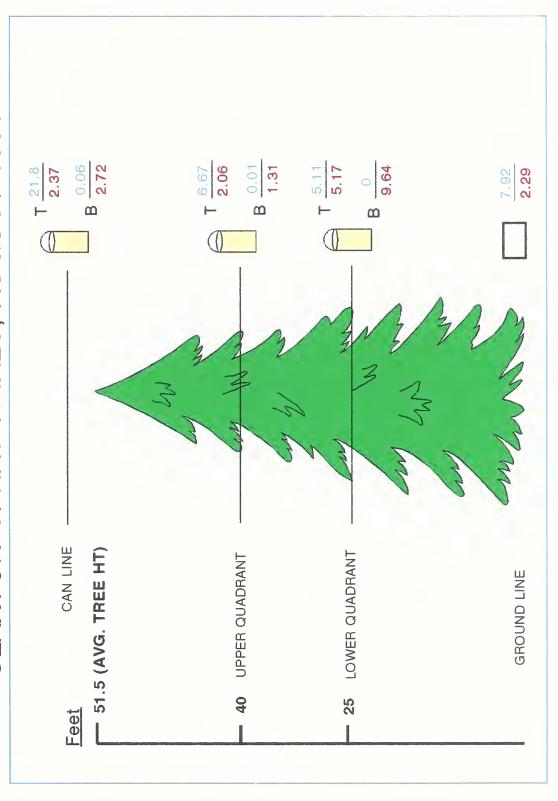
WITHIN THE CROWN FOR ALL TREES EACH DAY. COMPOSITE DEPOSITION (AVG.) FOR CARDS IMMEDIATELY UNDER TREE, OVER TREE AND

Rhodamine Bullseye

AIRCRAFT RATE = 1.2 gal/acre



DAY 3 - AVERAGE DEPOSITION - DROPS/CM2 CLAXTON SPRAY TRIALS, AUGUST 1991 SPRAY DEPOSIT PENETRATION



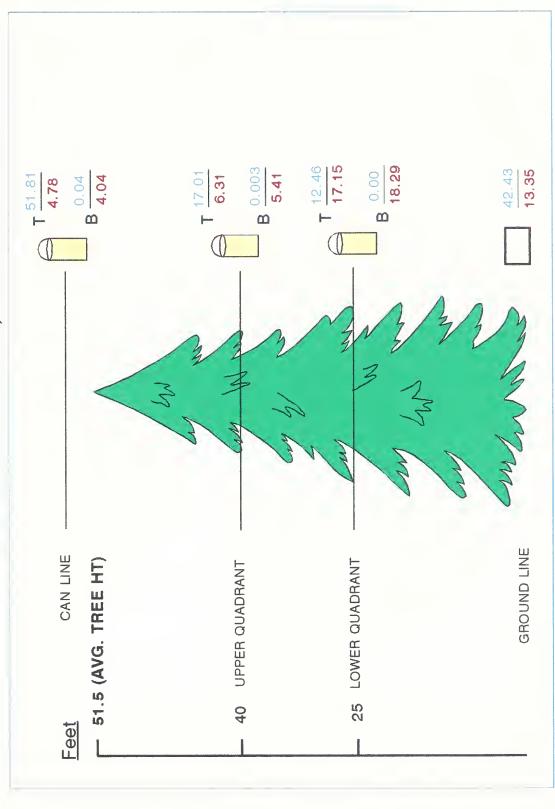
WITHIN THE CROWN FOR ALL TREES EACH DAY. COMPOSITE DEPOSITION (AVG.) FOR CARDS IMMEDIATELY UNDER TREE, OVER TREE AND

Rhodamine Bullseye

GROUND SPRAYER RATE = 1.2 gal/acre equivalent AIRCRAFT RATE = 1.2 gal/acre



DAY 3 - AVERAGE DEPOSITION - FLUID OUNCES/ACRE CLAXTON SPRAY TRIALS, AUGUST 1991 SPRAY DEPOSIT PENETRATION



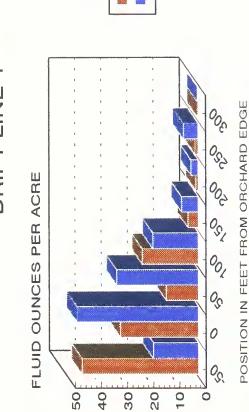
COMPOSITE DEPOSITION (AVG.) FOR CARDS IMMEDIATELY UNDER TREE, OVER TREE AND WITHIN THE CROWN FOR ALL TREES EACH DAY.

Bullseye AIRCRAFT RA Rhodamine GROUND SP

AIRCRAFT RATE = 1.2 gal/acre

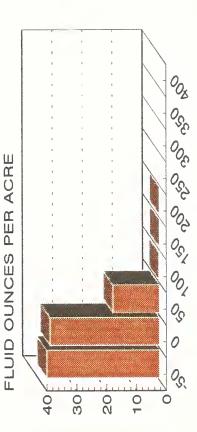


DAY 1 DRIFT LINE 1



GROUND SPRAYER

DAY 1 DRIFT LINE 2



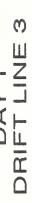
GROUND SPRAYER

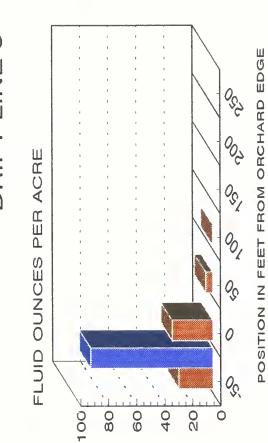
POSITION IN FEET FROM ORCHARD EDGE

APPLICATION FOR BOTH GROUND AND AIRCRAFT WAS EQUIVALENT TO 1.2 gal/acre AUGUST 20, 1991 NO BULLSEYE DEPOSITION DETECTED ON CARDS



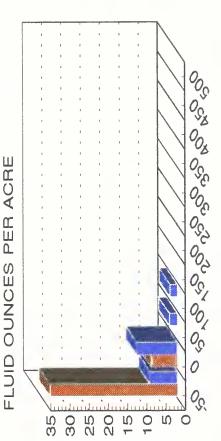
DAY 1 DRIFT LINE 3





GROUND SPRAYER AIRCRAFT

DAY 1 DRIFT LINE 4



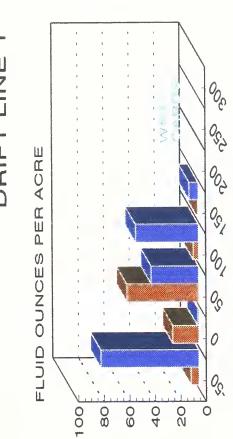
GROUND SPRAYER AIRCRAFT

POSITION IN FEET FROM ORCHARD EDGE

APPLICATION FOR BOTH GROUND AND AIRCRAFT WAS EQUIVALENT TO 1.2 gal/acreAUGUST 20, 1991



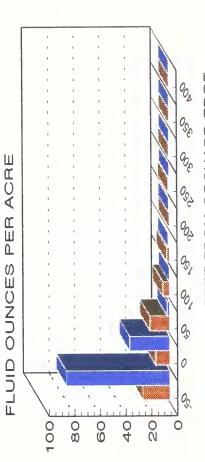
CLAXTON SPRAY TRIALS DAY 2 DAY 2 DAY 2 DAY 2 DAY 2 DAY 2





DAY 2 DRIFT LINE 2

POSITION IN FEET FROM ORCHARD EDGE



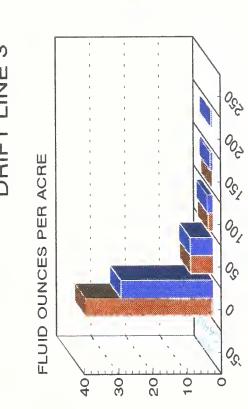
GROUND SPRAYER AIRCRAFT

POSITION IN FEET FROM ORCHARD EDGE

APPLICATION FOR BOTH GROUND AND AIRCRAFT WAS EQUIVALENT TO 1.2 gal/acre AUGUST 21, 1991



DAY Z DRIFT LINE 3

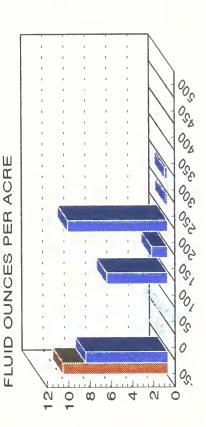


GROUND SPRAYER

AIRCRAFT

DAY 2 DRIFT LINE 4

POSITION IN FEET FROM ORCHARD EDGE



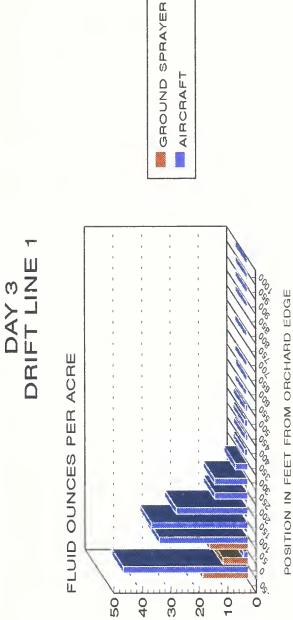
GROUND SPRAYER

AIRCRAFT

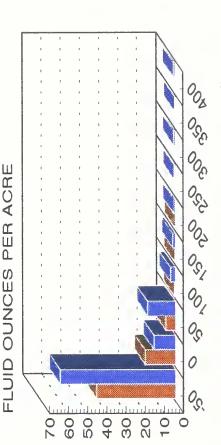
POSITION IN FEET FROM ORCHARD EDGE

APPLICATION FOR BOTH GROUND AND AIRCRAFT WAS EQUIVALENT TO 1.2 gal/acre AUGUST 21, 1991





DAY 3 DRIFT LINE 2



GROUND SPRAYER

AIRCRAFT

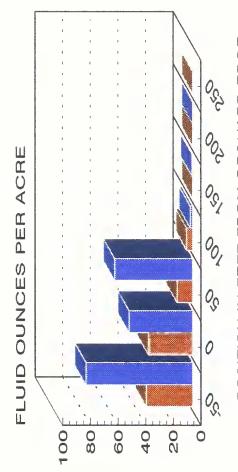
POSITION IN FEET FROM ORCHARD EDGE

Figure 43 APPLICATION FOR BOTH GROUND AND AIRCRAFT WAS EQUIVALENT TO 1.2 gal/acre AUGUST 22, 1991



DAY 3 DRIFT LINE 3

DRIFT LINE

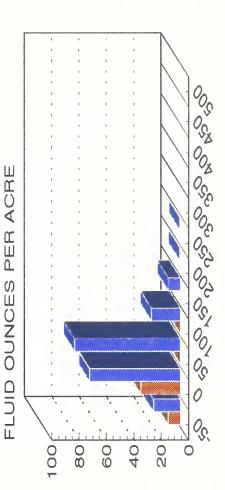


GROUND SPRAYER
AIRCRAFT

POSITION IN FEET FROM ORCHARD EDGE

DAY 3

DAY 3 DRIFT LINE 4



GROUND SPRAYER

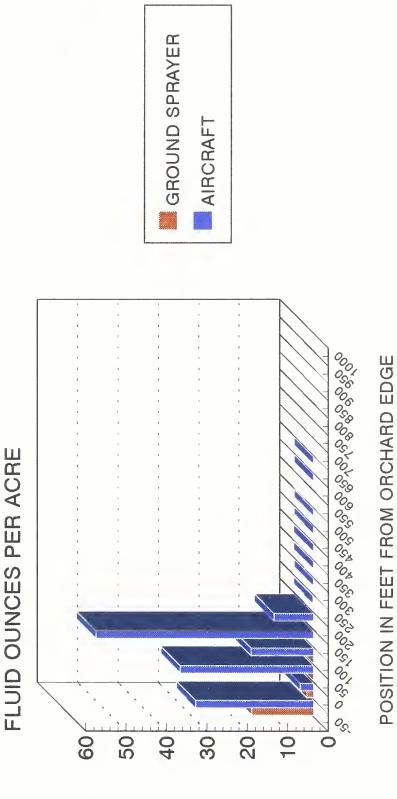
AIRCRAFT

POSITION IN FEET FROM ORCHARD EDGE

APPLICATION FOR BOTH GROUND AND AIRCRAFT WAS EQUIVALENT TO 1.2 gal/acre AUGUST 22, 1991



DAY 3 DRIFT LINE 0



APPLICATION FOR BOTH GROUND AND AIRCRAFT WAS EQUIVALENT TO 1.2 gal/acre AUGUST 22, 1991



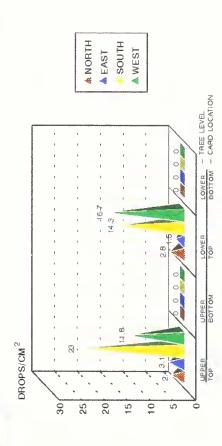
TREE AIRCRAFT - DAY TREE LINE

AUGUST 1991

AIRCRAFT - DAY

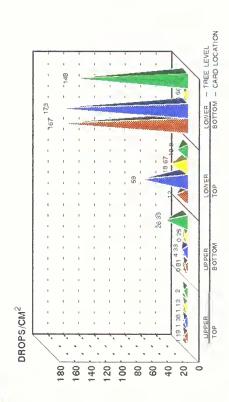
Figure 46



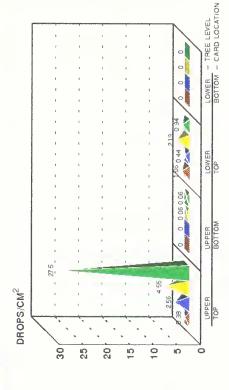


AUGUST 20, 1991 AIRCRAFT RATE = 1.2 gal/acre

TREE LINE 1 - TREE 1 GROUND - DAY

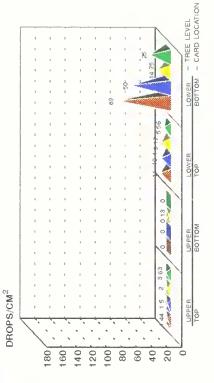


AUGUST 20, 1991 GROUND SPRAYER RATE = 2.9 gal/acre



AUGUST 20, 1991 AIRCRAFT RATE = 1.2 gal/acre

- TREE 2 GROUND - DAY 1 TREE LINE 1



GROUND SPRAYER RATE = 2.9 gal/acre



TREE

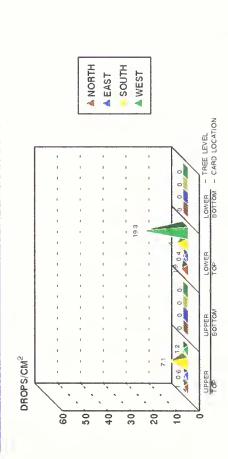
TREE LINE 2 -

AIRCRAFT - DAY

Figure 47

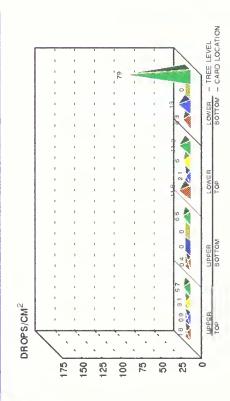
AUGUST 1991

TREE LINE 2 - TREE AIRCRAFT - DAY

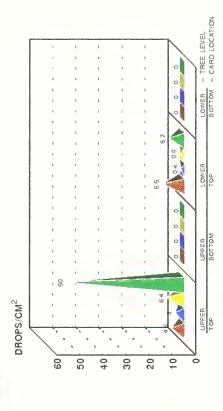


AUGUST 20, 1991 AIRCRAFT RATE = 1.2 gal/acre

TREE LINE 2 - TREE 1 GROUND - DAY

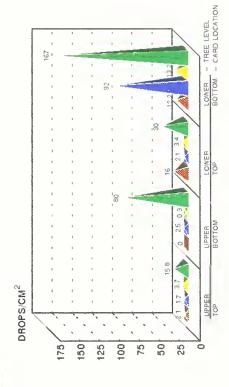


AUGUST 20, 1991 GROUND SPRAYER RATE ≈ 2.9 gal/acre



AIRCRAFT RATE = 1.2 gal/acre AUGUST 20, 1991

\sim TREE LINE 2 - TREE **GROUND - DAY**





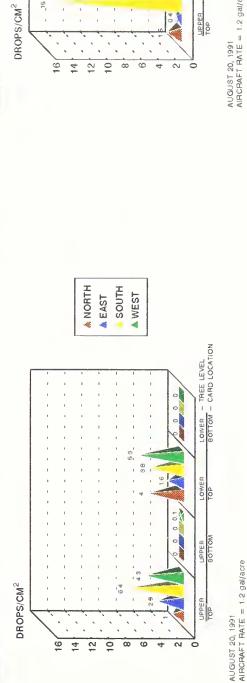
CLAXTON SPRAY TRIALS

TREE LINE 3 - TREE **AIRCRAFT - DAY**

QUADRANT DEPOSITION AUGUST 1991

Figure 48

TREE LINE 3 - TREE **AIRCRAFT - DAY**



12 0

AIRCRAFT BATE = 1.2 gal/acre AUGUST 20, 1991

- CARD LOCATION

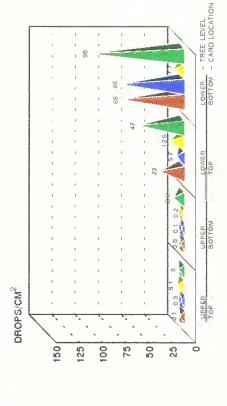
S - TREE **GROUND - DAY** TREE LINE 3

TREE LINE 3 - TREE 1

DROPS/CM²

00 75 50

GROUND - DAY



AUGUST 20, 1991 GROUND SPRAYER RATE = 2.9 gal/acre

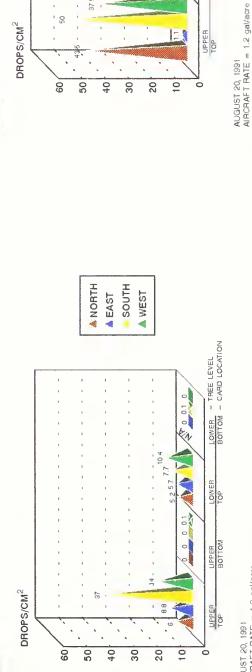


Figure 49

TREE AIRCRAFT - DAY TREE LINE 4

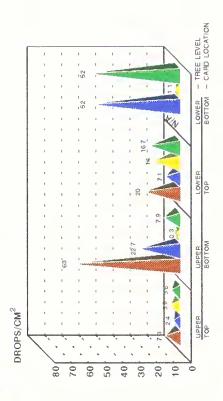
AUGUST 1991

TREE LINE 4 - TREE 2 **AIRCRAFT - DAY**



AIRCRAFT RATE = 1.2 gal/acre

TREE LINE 4 - TREE 1 GROUND - DAY 1



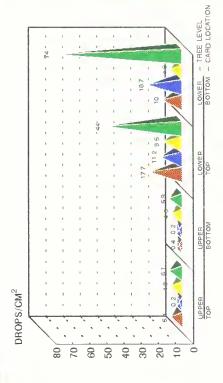
AUGUST 20, 1991 GROUND SPRAYER RATE = 2.9 gal/acre



LOWER - TREE LEVEL
BOTTOM - CARD LOCATION

LOWER

UPPER



AUGUST 20, 1991 GROUND SPRAYER RATE = 2.9 gal/acre



CLAXTON SPRAY TRIALS

TREE LINE 5 - TREE **AIRCRAFT - DAY**

DROPS/CM²

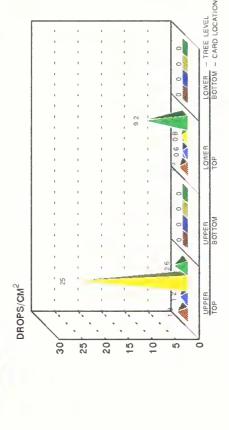
25 20

10 ij

QUADRANT DEPOSITION AUGUST 1991

 α TREE LINE 5 - TREE AIRCRAFT - DAY

Figure 50



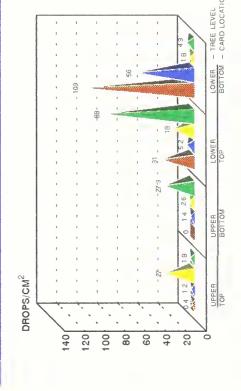
♠ NORTH

SOUTH ▲ WEST

A EAST

AUGUST 20, 1991 AIRCRAFT RATE = 1.2 gal/acre

S TREE LINE 5 - TREE **GROUND - DAY**



AUGUST 20, 1991 GROUND SPRAYER RATE = 2.9 gal/acre

AUGUST 20, 1991 GROUND SPRAYER RATE = 2.9 gal/acre

GROUND - DAY 1

AUGUST 20, 1991 AIRCRAFT HATE = 1.2 gal/acre

LOWER - TREE LEVEL BOTTOM - CARD LOCATION

TREE LINE 5 - TREE

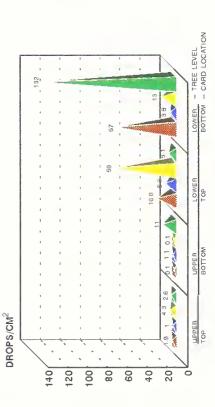




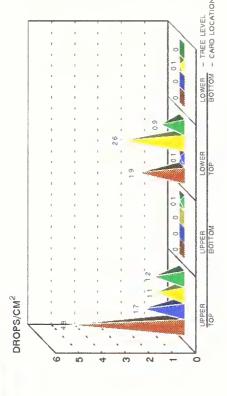
Figure 51

AIRCRAFT - DAY 1 TREE LINE 6 - TREE 1

DROPS/CM²

QUADRANT DEPOSITION AUGUST 1991

AIRCRAFT - DAY 1 TREE LINE 6 - TREE 2



NORTH

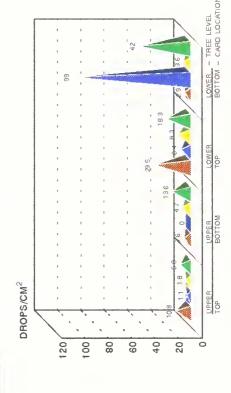
▲ EAST SOUTH

▲ WEST

AUGUST 20, 1991 AIRCHAFT RATE = 1.2 gal/acre

GROUND - DAY 1 TREE LINE 6 - TREE

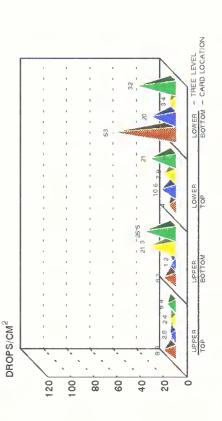
2



AUGUST 20, 1991 GROUND SPRAYER RATE = 2.9 gal/acre

AUGUST 20, 1991 AIRCRAFT RATE = 1.2 gal/acre

GROUND - DAY 1 TREE LINE 6 - TREE 1



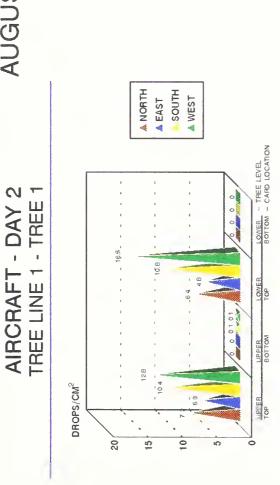
AUGUST 20, 1991 GROUND SPRAYER RATE = 2.9 gal/acre



AUGUST 1991

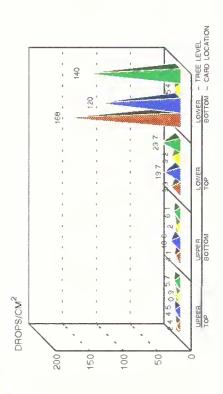
Figure 52

TREE LINE 1 - TREE 2 **AIRCRAFT - DAY 2**

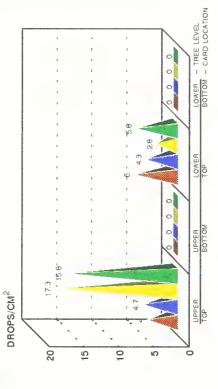


AUGUST 21, 1991 AIRCRAFT RATE = 1.2 gal/acre

TREE LINE 1 - TREE 1 GROUND - DAY 2

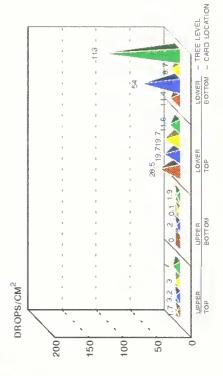


AUGUST 21, 1991 GROUND SPRAYER RATE = 2.9 gal/acre



AUGUST 21, 1991 AIRCRAFT RATE = 1.2 gal/acre

TREE LINE 1 - TREE 2 GROUND - DAY 2





AUGUST 1991

AIRCRAFT - DAY 2

TREE LINE 2 - TREE

Figure 53

TREE 2 AIRCRAFT - DAY 2 TREE LINE 2

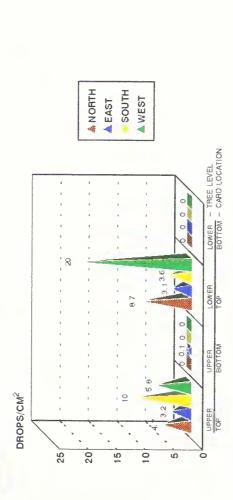
DROPS/CM²

20

15

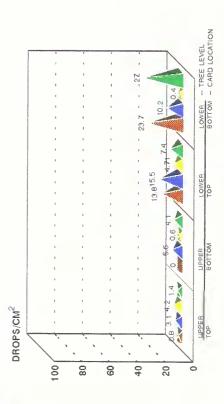
10

25



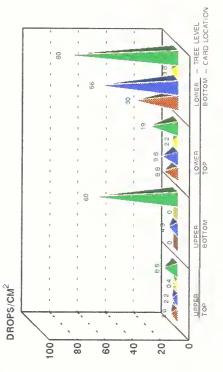
AUGUST 21, 1991 AIRCRAFT RATE = 1.2 gal/acre

TREE LINE 2 - TREE 1 GROUND - DAY 2



AUGUST 21, 1991 GROUND SPRAYER RATE = 2.9 gal/acre





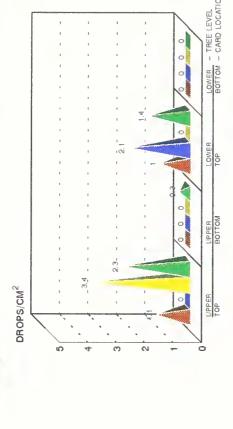


AUGUST 1991 AIRCRAFT - DAY 2 TREE LINE 3 - TREE 1

DROPS/CM²

Figure 54

TREE LINE 3 - TREE 2 AIRCRAFT - DAY 2



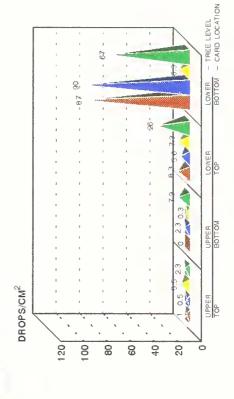
▲ NORTH

SOUTH **▲** EAST

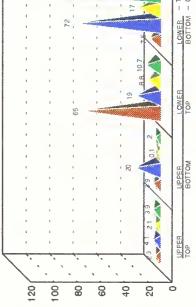
▲ WEST

AUGUST 21, 1991 AIRCRAFT RATE = 1.2 gal/acre

TREE LINE 3 - TREE 2 GROUND - DAY 2



GROUND SPRAYER RATE = 29 gal/acre



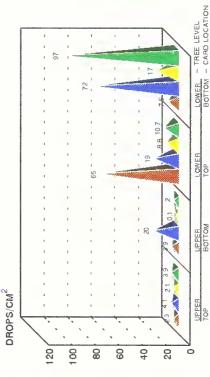
AUGUST 21, 1991 GROUND SPRAYER RATE = 2.9 gal/acre

GROUND - DAY 2

AUGUST 21, 1991 AIRCRAFT RATE = 1.2 gal/acre

LOWER - TREE LEVEL BOTTOM - CARD LOCATION

TREE LINE 3 - TREE 1





AUGUST 1991

AIRCRAFT - DAY 2

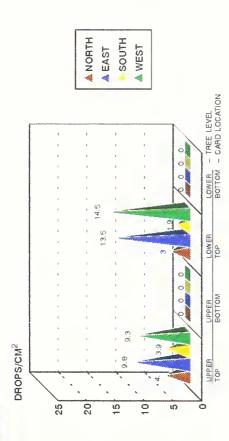
- TREE 1

TREE LINE 4

Figure 55

TREE LINE 4 - TREE 2 AIRCRAFT - DAY 2

DROPS/CM²



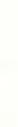
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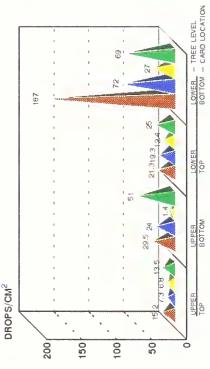
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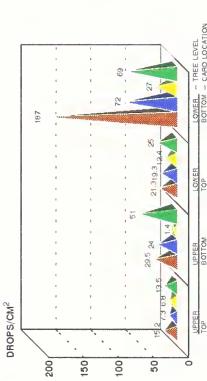
25



TREE LINE 4 - TREE 1 GROUND - DAY 2



AIRCRAFT RATE = 1.2 gal/acre AUGUST 21, 1991



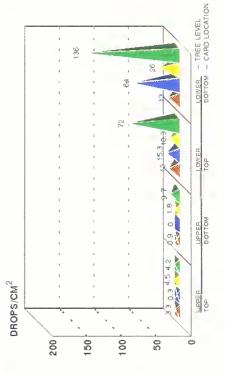
TREE LINE 4 - TREE 2 GROUND - DAY 2

AUGUST 21, 1991 AIRCRAFT RATE = 1.2 gal/acre

LOWER - TREE LEVEL BOTTOM - CARD LOCATION

LOWER

UPPER TOP



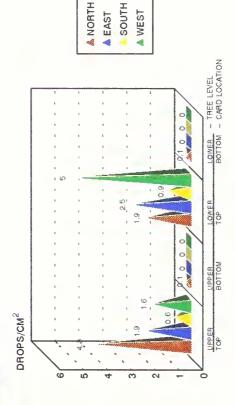
GROUND SPRAYER RATE = 2.9 gal/acre



Figure 56

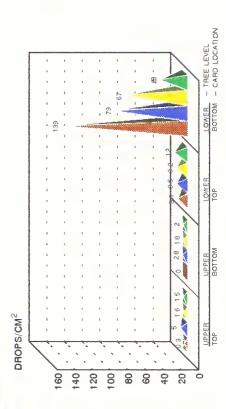
AIRCRAFT - DAY 2 TREE LINE 5 - TREE 2

AIRCRAFT - DAY 2 TREE LINE 5 - TREE 1

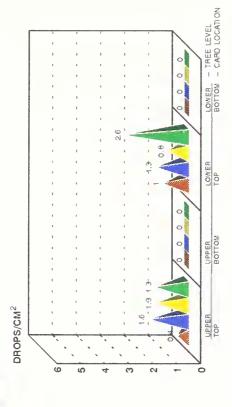


AUGUST 21, 1991 AIRCRAFT RATE ≈ 1.2 gal/acre

GROUND - DAY 2 TREE LINE 5 - TREE 1

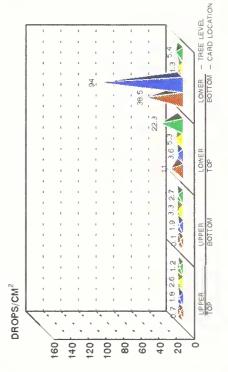


AUGUST 21, 1991 GROUND SPHAYER RATE = 2.9 gal/acre



AUGUST 21, 1991 AIRCRAFT RATE = 1.2 gal/acre

GROUND - DAY 2 TREE LINE 5 - TREE 2

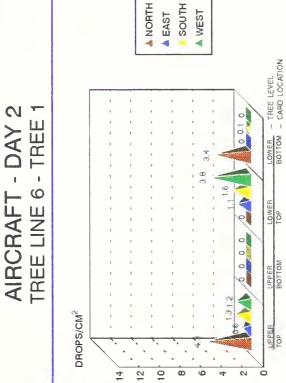


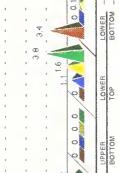
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AUGUST 1991

Figure 57

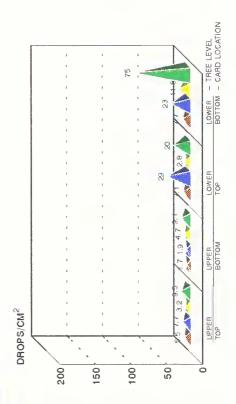
TREE LINE 6 - TREE 2 AIRCRAFT - DAY 2



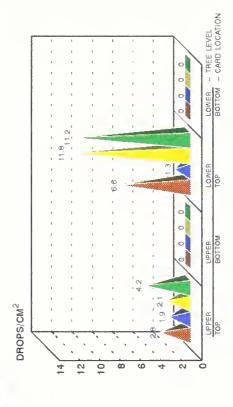


AUGUST 21, 1991 AIRCRAFT RATE = 1.2 gal/acre

TREE LINE 6 - TREE 1 GROUND - DAY 2

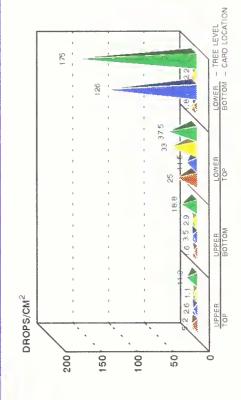


AUGUST 21, 1991 GROUND SPRAYER RATE = 2.9 gal/acre



AUGUST 21, 1991 AIRCRAFT RATE = 1.2 gal/acre

S GROUND - DAY 2 TREE LINE 6 - TREE



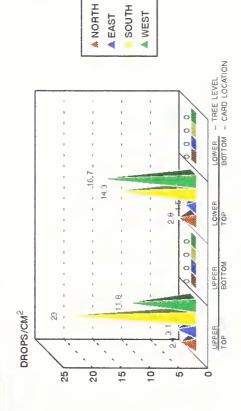
AUGUST 21, 1991 GROUND SPRAYER RATE = 2.9 gal/acre

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Figure 58

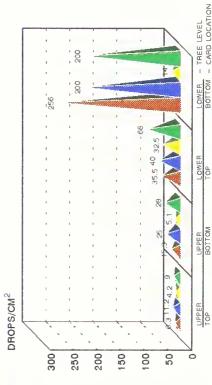
AIRCRAFT - DAY 3 TREE LINE 1 - TREE 2

AIRCRAFT - DAY 3 TREE LINE 1 - TREE 1

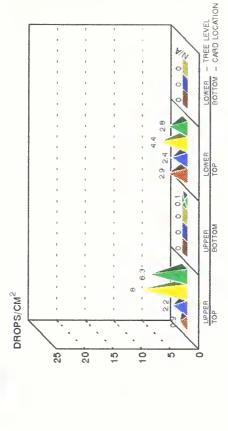


AUGUST 22, 1991 AIRCRAFT RATE = 1.2 gal/acre

GROUND - DAY 3 TREE LINE 1 - TREE 1

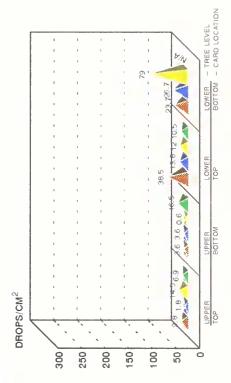


AUGUST 22, 1391 GROUND SPRAYER RATE = 2.9 gal/acre



AUGUST 22, 1991 AIRCRAFT RATE = 1.2 gal/acre

GROUND - DAY 3 TREE LINE 1 - TREE 2

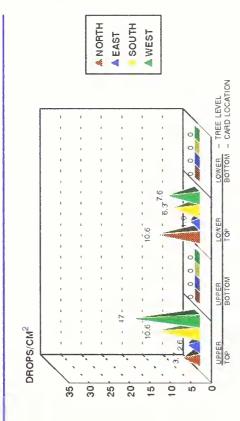




AIRCRAFT - DAY 3 TREE LINE 2 - TREE 1

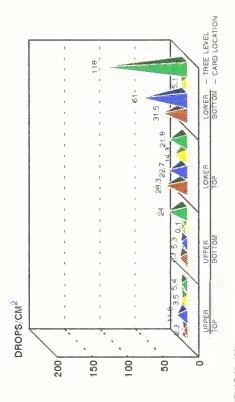
Figure 59

AIRCRAFT - DAY 3 TREE LINE 2 - TREE 2

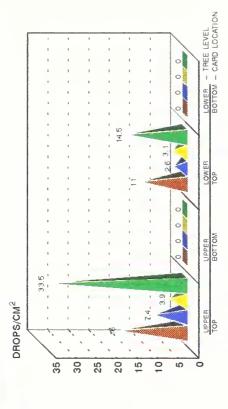


AUGUST 22, 1991 AIRCRAFT RATE = 1.2 gal/acre

GROUND - DAY 3 TREE LINE 2 - TREE 1

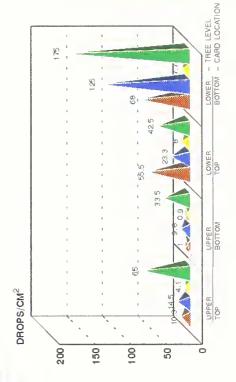


AUGUST 22, 1991 GROUND SPRAYER RATE = 2.9 gal/acre



AUGUST 22, 1991 AIRCRAFT RATE = 1.2 gal/acre

GROUND - DAY 3 TREE LINE 2 - TREE 2



AIRCRAFT - DAY 3

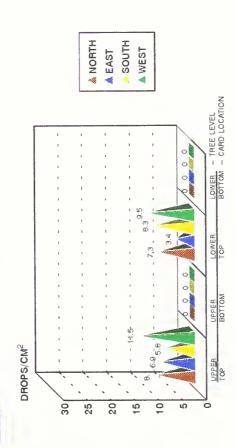
TREE 1

TREE LINE 3 -

I KIALS SITION AIRCRA

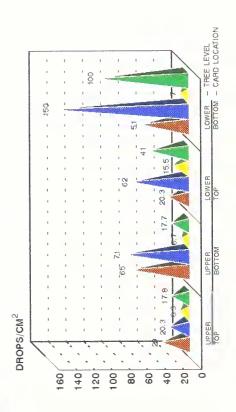
Figure 60

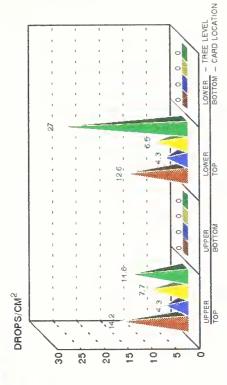
AIRCRAFT - DAY 3 TREE LINE 3 - TREE 2



AUGUST 22, 1991 AIRCRAFT RATE = 1.2 gal/acre

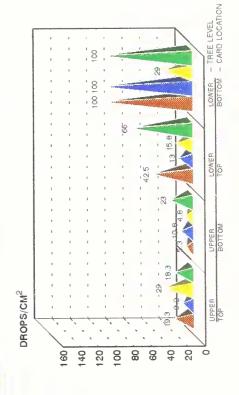
GROUND - DAY 3 TREE LINE 3 - TREE 1





AUGUST 22, 1991 AIRCRAFT RATE = 1.2 gal/acre

GROUND - DAY 3 TREE LINE 3- TREE 2



AUGUST 22, 1991 GROUND SPRAYER RATE = 2.9 gal/acre

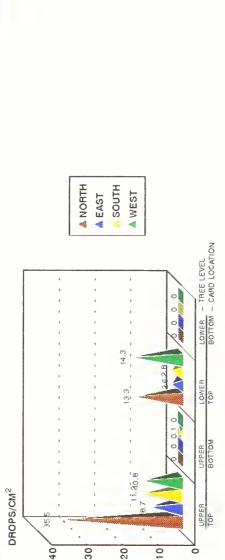


AIRCRAFT - DAY 3 TREE LINE 4 - TREE 1

AUGUST 1991

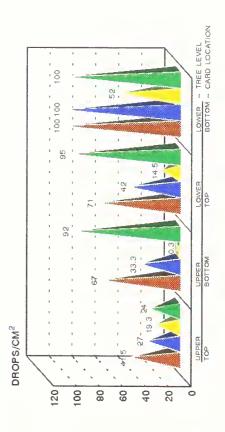
Figure 61

TREE LINE 4 - TREE 2 AIRCRAFT - DAY 3

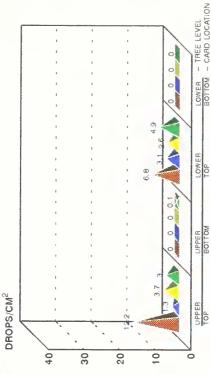


AIRCRAFT RATE = 1.2 gal/acre AUGUST 22, 1991

TREE LINE 4 - TREE 1 GROUND - DAY 3

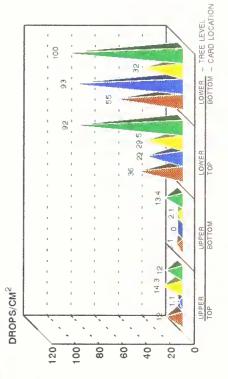


AUGUST 22, 1991 GROUND SPRAYER RATE = 2.9 gal/acre



AIRCRAFT RATE = 1.2 gal/acre AUGUST 22, 1991

TREE LINE 4 - TREE 2 GROUND - DAY 3



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AIRCRAFT - DAY 3

TREE LINE 5 - TREE

AUGUST 1991

Figure 62

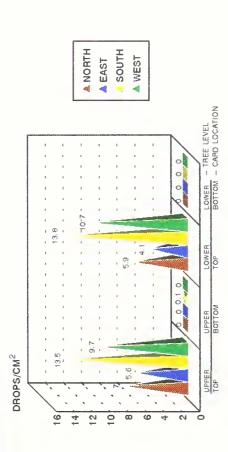
TREE LINE 5 - TREE 2 AIRCRAFT - DAY 3

DROPS/CM²

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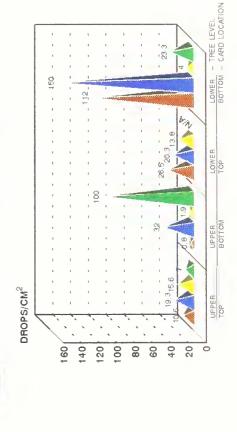
0



AIRCRAFT RATE = 1.2 gal/acre

LOWER - TREE LEVEL
BOTTOM - CARD LOCATION

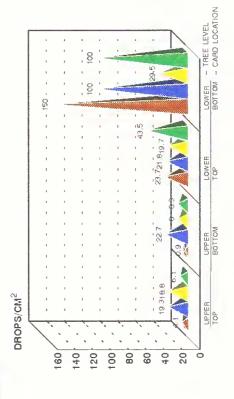
TREE LINE 5 - TREE 2 GROUND - DAY 3



GROUND SPRAYER RATE = 2.9 gal/acre



TREE LINE 5 - TREE 1





AUGUST 1991 AIRCRAFT - DAY 3 TREE 1

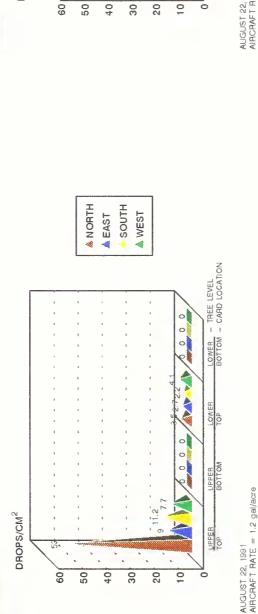
TREE LINE 6 -

Figure 63

TREE 2 AIRCRAFT - DAY 3 TREE LINE 6 -

DROPS/CM²

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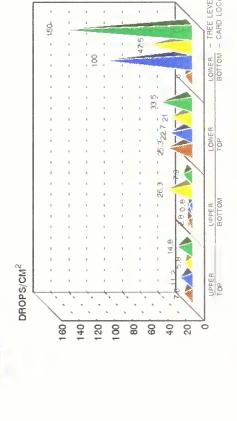
AUGUST 22, 1991 AIRCRAFT RATE = 1.2 gal/acre

TREE LINE 6 - TREE 2 GROUND - DAY 3

TREE LINE 6 - TREE 1 GROUND - DAY 3

DROPS/CM²

091 140 120 100 80 09 40 20



AUGUST 22, 1991 GROUND SPRAYER RATE = 2.9 gal/acre





